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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                  OM protein - protein search, using sw model
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June 2, 2003, 14:14:14; Search time 31.2821 Seconds (without alignments) 170.386 Million cell updates/sec

US-09-780-438C-1

211 1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40 Title: Perfect score: Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

Total number of hits satisfying chosen parameters:

908470 seqs, 133250620 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries ·

/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980. /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981. A_Geneseq_101002:* Database :

/SIDS2/gcgdata/geneseg/genesegp-embl/AA1983.DAT:* /SIDS2/gcgdata/geneseg/genesegp-embl/AA1984.DAT:* /SIDS2/gcgdata/geneseg/genesegp-embl/AA1985.DAT:* /SIDS2/gcgdata/geneseg/genesegp.embl/AA1986.DAT:*/SIDS2/gcgdata/geneseg/genesegp.embl/AA1987.DAT:*/SIDS2/gcgdata/geneseg/genesegp.embl/AA1988.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.

/SIDS2/gcgdata/geneseg/genesegp-embl/AA1990.DAT:* /SIDS2/gcgdata/geneseg/genesegp-embl/AA1989.DAT: /SIDS2/gcgdata/geneseg/genesegp-emb1/AA1993 /SIDS2/gcgdata/geneseg/genesegp-emb1/AA1994 /SIDS2/gcgdata/geneseg/genesegp-embl/AA199 /SIDS2/gcgdata/geneseq/genesegp

/SIDS2/gcgdata/geneseg/genesegp-embl/AA2000.DAT. /SIDS2/gcgdata/geneseg/genesegp-embl/AA2001.DAT. /SIDS2/gcgdata/geneseg/genesegp-emb1/AA1996 /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995 /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997 /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998 /gcgdata/genesed/genesedp

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

SUMMARIES

Description	784 Saposin-C. Homo s							Manino acid sequenc		
А	AAR70784	AAW85	AAU056	AAB31	AAR707	AAW856	AAY587	AAB31915	AAU056	AABA7
BD	16	20	22	22	16	50	21	22	22	3
Length	80	80	80	523	524	524	524	527	592	25
% Query e Match Length DB I	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	60 2
Score	211	211	211	211	211	211	211	211	211	127
Result No.			m	4	2	ø	7	œ	6	-

Saposin-C neurotro Prosaposin-derived		Prosaposin recepto	human	osin de	Human saposin C 22		Bovine prosaposin-	Prosaposin recepto		derive	Saposin C 12 to 29	Prosaposin recepto	Prosaposin recepto	Human saposin C 18	Guinea pig saposin	aemic	บ	ပ	Human saposin C pe	prosa	Prosaposin recepto	Prosaposin recepto	Theobroma cacoa as	υ	E	'n	CO	ຜ	Arabidopsis thalia	Arabidopsis thalia	•	Human gene 1 encod	
AAR70773 AAW30013	AAW66127	AAWBS656	. AAW30028		AAY82281	AAB67293	н	AAW66133	AAW85661	AAR70785	3	4	AAW85655	AAY82282	AAB67292	ABB57102	AAW83412	AAW99848	AAY83914	AAW30017	AAW66132	99	ABB07483	ABB07487	ABB58389	AAG35693	AAG35692	AAG17819	AAG17818	AAG17817	æ	AAE01850	
16 18		2 0		13		22	18	13	20	16	18	19	50	21	22	23	13	20	21	18	13	50	23	23	22	7	21	21	21	21	52	22	
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52.6		2 12		0	48.8				45.5	39.3	39.3	6	39.3	6	37.9	7.	Ŋ.	5.	'n.	35.5	υ.	•	4	4	4	33.2	ω.	33.2	ω.	33.2	31.8	31.8	
111	111	11:	106	106	103	66	96	96	96	83	83	83	83	83	80	78	75	75	75	75	75	75	73	73	73	70	70	70	70	70	29	49	
11	13	4.4	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		

ALIGNMENTS

RESULT 1	LT 1 0784
日	AAR70784 standard; Protein; 80 AA.
XX	
AC	AAR70784;
X	
DI	30-AUG-1995 (first entry)
XX	
DE	Saposin-C.
XX	
ΚW	Saposin-C; neuron; myelination; nervous system; neuroblastoma;
Σ	neurotrophic peptide; multiple sclerosis; leukoencephalitis;
ΚW	adrenal leukodystrophy.

Homo sapiens, WO9503821-A.

09-FEB-1995.

93US-0100247. 94US-0232513. 94WO-US08453 (OBRI/) OBRIEN-J-S. 28-JUL-1994; 30-JUL-1993; 21-APR-1994;

Obrien WPI; 1995-082029/11. Kishimoto Y,

Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from

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Sequence
                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAU05697
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Parkinson's disease; amyotrophic lateral sclerosis; Huntington's disease; Hachenic heart disease; Guillain-Barre disease; alopecia; AIDS dementia; cerebral malaria; HTLV; neuropathy; inflammatory neurodegenerative disease; toxin induced liver disease.
                                                                                                                                                                                                                      Gaps
                                                          human saposin-C (AAR70784), promotes neurite outgrowth in vitro.
A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic cytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary neurotrophic factor, interleukins-6, -2, -3 and gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
                                                The peptide given in AAR70773, corresponding to amino acids 8-29 of
                                                                                                                                                                                                                                                                                                                                                                                                                            Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; peripheral nervous system; central nervous system; PNS; CNS; AKt; Bcl-2; therapy; treatment; apoptosis; caspase;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatold arthritis; Crohn's disease; irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; progressive multifocal leukoencephalitis; Alzheimer's disease;
                                                                                                                                                                                             Length
                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                         SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                           1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
 cytokine(s), for treating nervous system diseases
                                                                                                                                                                                           100.0%; Score 211; DB 16; 100.0%; Pred. No. 9.9e-20;
                                                                                                                                                                                                                    0; Mismatches
                        Disclosure; Page 32; 50pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jse of prosaposin receptor agonist
                                                                                                                                                                                                                                                                                                                              AAW85653 standard; Peptide; 80 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7; Figure 2; 90pp; English.
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97US-0058352.
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                                                                                                                                                                                                                    Conservative
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                                                                                                                                                                                Query Match
Best Local Similarity 1
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                                                                                                                                                                     80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                     Human saposin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09912559-A1.
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prosaposin derived proline residues. Prosaposin, saposin C and prosaposin derived peptides (prosaptides), have therapeutic applications in promoting recovery after toxic, traumatic, myocardial ishchaemic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit proinfilammatory cytokine-induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bol-2 family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members which inhibit caspases, thereby inhibiting apoptosis. An additional mechanism whereby PRAs inhibit apoptosis is by blocking activation of JNR by TWR alpha is another well known mechanism for activation of JNR by TWR alpha is another well known mechanism for activation of JNR by TWR alpha is another well known mechanism for TWR alpha-induced by tumor necrosis factor-alpha (TNF alpha). The ethod can be used for inhibiting apoptosis which is apoptosis as sociated with a disorder such as e.g. rhematoid carthritis, crohn's disease, intitable bowel syndrome, asthma, cardiac infarction, congestive heart failure, multiple sclerosis, acute disease, dillammatory leukcencephalitis, progressive multifocal eleukcencephalitis, Alzheimer's disease, Parkinson's disease, ischemic heart disease, Guillain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AIDS dementia, cerebral malaria, HTLV, celliver disease. Saposin C acts as a prosaposin receptor agonist.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 211; DB 20;
100.0%; Pred. No. 9.9e-20;
tive 0; Mismatches 0;
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2000DK-0000866.
2000DK-0001027.
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Matches 40; Conserv
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02-JUN-2000;
30-JUN-2000;
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Kishimoto Y,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-JUL-1993;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-FEB-1995.
                                                                                                                                                                                                                                                                                                                                                                     Prosaposin
                                                                                                                                                                                                                                                                                                                     AAR70783;
                                                                                                                                     Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                            cells.
                                                                                                                                                                                                                                                                      RESULT 5
                                                                                                                                                                                                                                                                                  AAR70783
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                                                                                            co-factor for the lysosomal enzyme glucocerebrosidase, GCB. GCB is the enzyme involved in Gaucher's disease, a lysosomal storage disease. The invention relates to introducing new glycosylation sites into lysosomal enzymes/activators like GCB to improve their bioactivity. The novel polypeptides are used for the prevention and treatment of Gaucher's disease, Farber's disease, G_m_l gangliosidosis, Tay-Sach's disease, Niemann-Pick disease, Shindler disease, Hunter syndrome, Sly syndrome, Hurler and Huler/Scheie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents a human protein, which is used in the method of the invention. The specification describes a method which uses at least one polympeptide or polymucleotide sequence belonging to the perican, precursor of the retinol-binding plasma protein, precursor of the ganglioside GMZ activator, calgranulin B or saposin B protein families. The method is used for detecting, preventing or treating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; perlecan; retinol-binding plasma protein; calgranulin B; vaccine; ganglioside GMZ activator; saposin B; degenerative disease; glial cell; neurological disease; auto-immune disease; multiple sclerosis; toxicity; Alzhedimer's disease; Parkinson's disease; amyotrophic lateral sclerosis; rheumatoid polyarthritis; lupus erythematosus; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand
                      Improved lysosomal enzymes and lysosomal enzyme activators useful for treating Gaucher's disease -
                                                                                                                                                                                                                                                                   Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Detecting, preventing and treating degenerative, neurological and
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                                                                                 The sequence represents human Saponin C (SapC), an essential
                                                                                                                                                                                                                                           Length 80;
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                                                                                                                                                                                                                                                                    Indels
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                                                                                                                                                                                                                                                                                            40
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                                                                                                                                                                                                                                                                                           1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                            Score 211; DB 22;
Pred. No. 9.9e-20;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Malcus C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Amino acid sequence of a human protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Page 174-175; 209pp; French
                                                                                                                                                                                                                                                                                                                                                                              AAB31916 standard; Protein; 523 AA
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                                                          Example 5; Page 96; 97pp; English.
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                                                                                                                                                                                                                                          ch 100.0%;
1 Similarity 100.0%;
40; Conservative 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (INMR ) BIOMERIEUX STELHYS
                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-159475/16.
WPI; 2001-465259/50
                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                     80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200105422-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
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                                                                                                                                                                                             syndromes.
                                                                                                                                                                                                                                                                                                                                                                                                      AAB31916;
                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                  Matches
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degenerative, neurological and/or auto-immune disease. The polynuclectides and polypeptides are used for diagnosis, prognosis, prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisense sequences). They can also be used to assess efficacy of potential therapeutic agents, particularly compounds that reduce or inhibit toxicity towards glial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The peptide given in AAR70773, corresponding to amino acids 8-29 of human saposin-C (AAR70784), promotes neurite outgrowth in vitro. A consensus sequence was determined by comparing the peptide with hematopoletic and neuropoletic eytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    neurotrophic factor, interleukins 6, -2, -3 and -gamma, erythropotetin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saposin-C; neuron; myelination; nervous system; neuroblastoma;
neurotrophic peptide; multiple sclerosis; leukoencephalitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           310 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 211; DB 22;
100.0%; Pred. No. 8.7e-19;
iive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR70783 standard; Protein; 524 AA
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94US-0232513.
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Ouer Local Similarity 100.vv
Best Local Similarity 100.vv
Thes 40; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1995-082029/11.
N-PSDB; AAQ85355.
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                                                                                                                                                                                                                                                                                                                                                                                                       523 AA;
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100.0%; Score 211; DB 16; Length 524;

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RESULT 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prosaposin is a 70kDa glycoprotein which is proteclytically processed to generate saposins A, B, C and D, all of which are similar to each other and have a similar placement of six cysteines, a glycosylation of the and nave a similar placement of six cysteines, aglycosylation of site and conserved proline residues. Prosaposin, saposin C and posaposin derived peptides (prosaptides), have therapeutic and promoting recovery after toxic, traumatic, myocardial ishchaemic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit proinflammatory cytokine-induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bcl-2 canily members, such as BAD-Bcl-2, releasing Bcl-2 and its family members which inhibit caspases, thereby inhibiting apoptosis. An cadditional mechanism whereby PRAs inhibit apoptosis is by blocking activation of JNK, a proapoptotic signaling component. Within activation of JNK by Thr alpha is another well known mechanism for activation of JNK by Thr alpha is another well known mechanism for TNF alpha-induced, as well as other prolifiammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis which is
                                                                                                                                                                                                                                               Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; peripheral nervous system; central nervous system; PRS; pCBC-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease; Irritable bowel syndrome; asthma; cardiac infarction; congestive heart fallure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; progressive multifocal leukoencephalitis; Alzheimer's disease; progressive multifocal leukoencephalitis; Alzheimer's disease; Barkinson's disease; amyotrophic lateral sclerosis; Huntington's disease; lachemic heart disease; dillain-Barre disease; alopecia; AlDS dementia; cerebral malaria; HTLV; neuropathy; inflammatory neurodegenerative disease; toxin-induced liver disease.
                  Gaps
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                 Indels
                                                        311 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 350
                                          1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
  100.0%; Pred. No. 8.8e-19;
               0; Mismatches
                                                                                                                                                                                                                         Human prosaposin N-terminal peptide.
                                                                                                                                        AAW85652 standard; Protein; 524 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Use of prosaposin receptor agonist
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97US-0058352.
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                                                                                                                                                                                               (first entry)
              40; Conservative
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Best Local Similarity
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             Matches
                                                                                                              RESULT 6
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caspase-mediated or induced by a proinflammatory cytokine, for example TNF alpha or interferon-gamma. It can be used for inhibiting appotosis associated with a disorder such as e.g. rheumatorial arthitis, Crohn's disease, Irritable bowel syndrome, asthma, cardiac discentinated inflammatory leukoencephalitis, progressive multifocal leukoencephalitis, Alzheimer's disease, Parkinson's disease, multifocal amyotrophic lateral sclerosis, Huntington's disease, ischemic heart disease, Guillain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AlDS dementia, cerebral malaria, HILV, neuropathy, inflammatory neurodegenerative disease, and toxin-induced liver disease. This 524 N-terminal peptide of prosaposin also acts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saposin B derived peptides, useful as inhibitors of angiogenesis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note= "specifically claimed antiangiogenic peptide of Claim 23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note= "specifically claimed antiangiogenic peptide
   of Claim 4"
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 211; DB 20;
100.0%; Pred. No. 8.8e-19;
11ve 0; Mismatches 0;
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195..275
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                                                                                                                                                                                                                                                                                                                              as a prosaposin receptor agonist.
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Best Local Similarity
Matches 40; Conserv
                                                                                                                                                                                                                                                                                                                                                                                Sequence 524 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human prosaposin.
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Protein
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Modified-site
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                                                                                                                                       Sequence
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Protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence represents a human protein, which is used in the method of the invention. The specification describes a method which uses at least one polypeptide or polymorleotide sequence belonging to the perlecan, precursor of the retinol-bluding plasma protein, precursor of the families. The method is used for detecting, preventing or treating a families. The method is used for detecting, preventing or treating a degenerative, neurological and/or auto-immune disease. The polymorleotides and polypeptides are used for diagnosis, prognosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Detecting, preventing and treating degenerative, neurological and autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand
has potent antianglogenic and antitumour activity, and also has antiproliferative and antimigratory activity against endothelial cells. This activity is conserved in cryptic polypeptides as small as 5 amino acids (see AA785684-715), which can be synthetically prepared and used in vitro or in vivo for the treatment of undesired anglogenesis and tumor growth, especially Kaposi's sarcome (claimed). The polypeptides can also be used in conjunction with cytotoxic moieties to selectively kill certain cell types, e.g. for treatment of cancer, angiofibroma, neovascular glaucoma, arteriovenous malformation, nonunion fracture, arthritis and other connective tissue disorders, Osler-Weber syndrome, atherosclerotic plaque, psoriasis, corneal graft neovascularization, pyogenic granuloma, retrolental fibroplasia, diabetic retinopathy.
                                                                                                                                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                    Length 524;
                                                                                                                                                                                           scleroderma, haemangioma, trachoma, vascular adhesions and
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                                                                                                                                                                                                                                                                  100.0%; Score 211; DB 21;
100.0%; Pred. No. 8.8e-19;
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                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Amino acid sequence of a human protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                              AAB31915 standard; Protein; 527
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                Local Similarity 100.
les 40; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-159475/16.
                                                                                                                                                                                                            hypertropic scars
                                                                                                                                                                                                                                     524 AA;
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                                                                                                                                                                                                                                       Sequence
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prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisease sequences). They can also be used to assess efficacy of potential therapeutic agents particularly compounds that reduce or inhibit toxicity towards glial
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                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaucher's disease; Fabry's disease; Farber's disease; Gaucher's disease; Gamidana-Pick disease; Shindler disease; Hunter syndrome; Shindler disease; Hunter syndrome; Shindler disease; Huston protein; Saponin C; SapC.
                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human glucocerebrosidase, GCB-Saponin C, SapC, fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ħ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; glucocerebrosidase; GCB; lysosomal storage disease;
                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schambye
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                          314 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 353
                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                               1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                       Score 211; DB 22;
Pred. No. 8.8e-19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jensen RB,
                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note= "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1..95
label• Linker_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Halkier T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAU05698 standard; Protein; 592
                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      label- SapC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-JUN-2000; 2000DK-0000865.
02-JUN-2000; 2000DK-0000866.
30-JUN-2000; 2000DK-0001027.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96..592
/label- GCB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Jensen AD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-465259/50.
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                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 40; Conserv
                                                                                                                                                                                                                                        527 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200149830-A2
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The peptide given in AAR7073, corresponding to amino acids 8-29 of human saposin-C (AAR70784), promotes neurite outgrowth in vitro. A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic gytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary neurotrophic factor, interleukins-6, -2, -3 and gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myellnation ex vivo.
                                                                                                                                                                                                                                                                                                                    Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 52.6%; Score 111; DB 16; Best Local Similarity 100.0%; Pred. No. 1.6e-07; Matches 22; Conservative 0; Mismatches 0;
                                          1 CEFLVKEVTKLIDNNKTEKEILDAF 25
                      8 CEFLVKEVTKLIDNNKTEKEILDAF 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 30; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 CEFLVKEVTKLIDNNKTEKEIL 22
                                                                                                                                                         AAR70773 standard; peptide; 22 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ż
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Prosaposin-derived peptide 22-mer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 CEFLVKEVTKLIDNNKTEKEIL
                                                                                                                                                                                                                                                                                Saposin-C neurotrophic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94WO-US08453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93US-0100247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94US-0232513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW30013 standard; peptide;
                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kishimoto Y, Obrien JS;
                                                                                                                                                                                                                                                                                                                                                           adrenal leukodystrophy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1995-082029/11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (OBRI/) OBRIEN J S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22 AA;
                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JUL-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-APR-1994;
                                                                                                                                                                                                                                       30-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9503821-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-APR-1998
                                                                                                                                                                                                  AAR70773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW30013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
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                                                         요
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                                                                       The sequence is a fusion protein of human lysosomal enzyme glucocerebrosidase, GGB and its Co-factor, Saponin C, SapC. GCB is the enzyme involved in Gaucher's disease, a lysosomal storage disease. The invention relates to introducing new glycosylation sites into lysosomal enzymes/activators like GCB to improve their bloactivity. The novel polypeptides are used for the prevention and treatment of Gaucher's disease, Fabry's disease, Fabry's disease, G_m_l gangliosidosis, Tay-Sach's disease, Niemann-Pick disease, Shindler disease, Hunter syndrome, Sly syndrome, Hurler and Huler/Scheie
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to use of a prosaposin-related peptide or derivative, in the production of a medicament for use in preventing or delaying cell death, or in promoting the expression of cell death supporting gene product Bcl-XL. The invention is useful for preventing the death of cells e.g. brain cells, neurons and cardiac muscle cells, in vitro or ex vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Use of prosaposin-related peptides or derivatives as cytoprotective agents, for suppressing apoptosis or apoptosis-like cell death \,
                                                                                                                                                                                                                                                                                                                                                                              ö
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                                                                                                                                                                                                                                                                                                                                       Length 592;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 25;
                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Prosaposin; cell death; Bcl-XL; brain; cardiac muscle.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Sadamoto
                                                                                                                                                                                                                                                                                                                                                                                                                1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                       DB 22;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60.2%; Score 127; DB 22;
100.0%; Pred. No. 1.6e-09;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                   100.0%; Score 211; DB 27
100.0%; Pred. No. 1e-18;
:Ive 0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Morita F,
                                    Example 5; Page 96-97; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 12; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sato K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB67289 standard; Peptide; 25
treating Gaucher's disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99JP-0185155.
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                                                                                                                                                                                                                                                                                                                                                                            40; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-204263/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SAKA/) SAKANAKA M.
(TANA/) TANAKA J.
                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
Les 25; Conserv
                                                                                                                                                                                                                                                                                                592 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human saposin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SATO/) SATO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP1072609-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-JAN-2001
                                                                                                                                                                                                                                                             syndromes
                                                                                                                                                                                                                                                                                                  Sequence
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AAB67289;

AAB67289 RESULT

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Matches

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Gaps

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Sequence Query Match

Best Loc Matches

Length 22 Indels

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97WO-US04143.
                                                               WPI; 1998-495790/42.
N-PSDB; AAV07664.
                                                                                                                                                                                                                                                                                                                                                          22 AA;
05-MAR-1997;
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                                          O'Brien JS;
                                                                                                         pain, inhib
cell death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW85656;
                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                               Query Match
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Matches
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AAW85656
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                                                                                                                                                                                                                                                                                       The present sequence represents a prosaposin-derived peptide. A method has been developed of alleviating or preventing neuropathic pain in a subject, comprising administering an effective amount of an active fragment of prosaposin to the subject. The prosaposin-derived peptide is useful for therapy of neural or demyelination disorders in neural rissue. It can be used to stimulate neurite outgrowth, inhibit neural cell death, promote myelination or inhibit demyelination. The method is used to alleviate neuropathic pain resulting from a peripheral nerve disorder, such as neuroma, nerve compression, crush or stretch and incomplete nerve transsection, monoeuropathy or polyneuropathy.

Alternatively the neuropathic pain results from a disorder of the dorsal root ganglia, spinal cord, brainstem, thalamus or cortex.
          Human; prosaposin; neural disorder; demyelination disorder;
neural cell death; inhibition; myelination; neurite outgrowth;
neuropathic pain; peripheral nerve disorder; neuroma; mononeuropathy;
polyneuropathy; dorsal root ganglia; spinal cord; brainstem; thalamus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prosaposin; receptor agonist; neuropathic pain; neurite outgrowth; neural cell death; nerve disorder; side effect.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                     Prosaposin-derived peptide - useful for therapy of neural or demyelination disorders in neural tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.6%; Score 111; DB 18; Length 22; 100.0%; Pred. No. 1.6e-07; Ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 CEFLVKEVTKLIDNNKTEKEIL 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CEFLVKEVTKLIDNNKTEKEIL 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW66127 standard; peptide; 22 AA
                                                                                                                                                                                                                                                                     Claim 9; Page 52; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Prosaposin receptor agonist #1.
                                                                                                                             97WO-US04143.
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                                                                                                                                                  96US-0611307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 100.
nes 22; Conservative
                                                                                                                                                                       (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                WPI; 1997-470538/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                  22 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo saptens.
                                                                                                                             05-MAR-1997;
                                                                                                                                                  05-MAR-1996;
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                                                               Homo saptens
                                                                                   W09732895-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-NOV-1998
                                                                                                       12-SEP-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-SEP-1998
                                                                                                                                                                                             O'Brien JS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW66127;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
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Matches
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The invention relates to prosaposin receptor agonists. Also claimed are: (1) methods for alleviating neuropathic pain or inhibiting the conset of neuropathic pain, comprising administering a prosaposin receptor agonist; (2) inhibiting sensory or motor neuropathy, comprising contacting neuronal cells with a composition comprising a prosaposin receptor agonist; (3) methods for stimulating neurits outgrowth, inhibiting neural cell death, promoting myelination, or inhibiting demyeliating on contacting neuronal cells with a composition comprising a prosaposin receptor agonist which has 14-50 amino acids and comprising a prosaposin receptor agonist which has 14-50 amino acids and comprising to a propasposin derived protein. The processes may be used for treatment of neuropathic pain resulting from peripheral nerve disorders (e.g. neuroma, nerve compression, nerve crush, nerve affects, incomplete nerve transsection, mononeuropathy or polyneuropathy) or disorders of dorsal root ganglia, the spinal cord, the brainstem, the thalamus or the cortex. The receptor agonists do not cause undesirable side effects. The present sequence represents a specifically claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; progressive multifocal leukoencephalitis; Alzheimer's disease; parogressive multifocal leukoencephalitis; Alzheimer's disease; Huntington's disease; anyotrophic lateral sclerosis; Huntington's disease; ischemic heart disease; Guillain-Barre disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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inflammatory neurodegenerative disease; toxin-induced liver disease.
                                                                                                                                                                                                                                                                                                                                               Use of prosaposin receptor agonists – for alleviating neuropathic pain, inhibiting sensory or motor neuropathy, or inhibiting neural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; peripheral nervous system; Central nervous system; PNS; CNS; Akt; Bcl-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 3; Page 2; 67pp; English.
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(REGC ) UNIV CALIFORNIA
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The present invention relates to use of a prosaposin-related peptide or derivative, in the production of a medicament for use in preventing or delaying cell death, or in promoting the expression of cell death supporting gene product Bcl-XL. The invention is useful for preventing the death of cells e.g. brain cells, neurons and cardiac muscle cells, in vitro or ex vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Use of prosaposin-related peptides or derivatives as cytoprotective agents, for suppressing apoptosis or apoptosis-like cell death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 28; 41pp; English.
                                                                                                                                                                30-JUN-2000; 2000EP-0305504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.0
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                         Sakanaka M, Tanaka J,
                                                                                                                                                                                                                                                                          (SAKA/) SAKANAKA M.
(TANA/) TANAKA J.
(SATO/) SATO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-204263/21
                                                                                                                                                                                                                     30-JUN-1999;
Homo sapiens
                                                 EP1072609-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
ð
                                                                                                                                                                                                                                                                                                                                                                                                                         Prosaposin is a 70kba glycoprotein which is proteolytically processed to generate saposins A, B, C and D, all of which are similar to each corper and have a similar placement of six cysteines, a glycosylation site and conserved proline residues. Prosaposin, saposin C and prosaposin derived peptides (prosaptides), have therapeutic applications in promoting recovery after toxic, traumatic, myccardial shchaemic, degenerative and inherited lesions to the peripheral and inhibit prolifiammatory cytokine-induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bcl-2 family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members, such as BAD-Bcl-2, releasing bcl-2 and its family members after binding to the receptor. PRAS block JNK a proapoptotic signaling component. Within activation of JNK, a proapoptotic signaling component. Within several minutes after binding to the receptor, PRAS block JNK a ctivation induced by tumor necrosis factor-alpha (TNF alpha). The activation induced by tumor necrosis factor-alpha (TNF alpha). The cativation of JNK by TNF alpha is another well known mechanism for activation of JNK by TNF alpha is another well known mechanism for TNF alpha-induced, as well as other proinflammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis which is caspase-mediated or induced by a proinflammatory cytokine-induced archivita, crohn's disease, irritable bowel sydicme, asthma, cardiac archivitis, Crohn's disease, irritable bowel sydicme, asthma, cardiac infarction, congestive heart fallure, multiple sclerosis, acute dissaminated inflammatory leukoencephalitis, progressive multifocal culsammatory leukoencephalitis, progressive multifocal casposic configured disease, traumatic barred disease, duillain-Barre disease, traumatic barred disease, duillammatory neurodegenerative disease, and toxin-induced cord injury, alopecia, Albs Gmentia, cerebral malaria, HTLV, neuropathy, i
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                                                                                                                                                                                                                                                                                                                                 Use of prosaposin receptor agonist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 CEFLVKEVTKLIDNNKTEKEIL 29
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                                                                                                                                                                                                                                                                                                                                                                                   Claim 7; Page 66; 90pp; English.
                                                                         98US-0088129.
97US-0058352.
                    98WO-US19216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
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Les 22; Conservative
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                    09-SEP-1998;
                                                                         04-JUN-1998;
09-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-APR-2001
                                                                                                                                                                                                                  O'brien JS;
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Search completed: June 2, 2003, 14:15:44
Job time: 32.2821 secs
                           1 CEFLVKEVTKLIDNNKTEKEIL 22
8 CEFLVKEVTKLIDNNKTEKEIL 29
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Gaps

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52.6%; Score 111; DB 22; Length 22; 100.0%; Pred. No. 1.6e-07; Live 0; Mismatches 0; Indels

22 AA;

Morita F, Sadamoto Y;

Sato K,

99JP-0185155

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GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
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OM protein - protein search, using sw model

Run on:

June 2, 2003, 14:14:14; Search time 14.359 Seconds (without alignments) 267.803 Million cell updates/sec

US-09-780-438C-1 211 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched:

283224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		ø				
Result No.	Score	Query Match	Length	DB	ID	Description
п	211	100.0	: :	: ¬	SAHUP	sabosto descursor
7	172	81.5	80		S21770	saposin-C - bovine
m	119		81	7	A32026	
4	93	44.1	554		A28716	saposin precursor
Ŋ	85	40.3	557	Н	JH0604	saposin precursor
φ	80	37.9	496	N	JS0732	O
7	78	37.0	428	~	847096	
80	78	37.0	474	N	T12049	sin (EC 3.4.
σ'n	78	37.0	965	~	T00207	ũ
10	75	35,5	508	N	S19697	tic protei
11	74		280	~	PC4080	
12	74		206	N	T07915	
13	74	35.1	513	7	T11686	
14	72		292	N	T14446	
15	72		322	C)	S41400	
16	70		206	N	F86253	
17	69	32.7	509	7	866516	
18	69	32.7	509	~	S49349	(EC 3
19	68	32.2	513	N	T09739	0
20	67.5	32.0		N	T15674	_
21	65	0		~	JC7272	aspartic proteinas
22	64	30.3		~	T21381	hypothetical prote
23	63.5	30.1		~	B71625	rifin PFB0040c - m
24	63	29.9		~	S75382	hypothetical prote
25	62.5	29.6		~	F97080	∽⊆
56		29.6		~	G96975	- 12
27	62	29.4	213	~	T46069	cal
28	œ	28.9	206	N	S71591	'n
29	58.5	27.7	1732	N	G84664	

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hypothetical prote	cation transport P	conserved hypothet	thiol-disulfide in	rifin PFB0035c - m	cell surface glyco	protein T25N20.11	uncharacterized pr	mismatch repair pr	hypothetical prote	cobalamin blosynth	hypothetical prote				
B64411	A71800	T48201	T00657	D64615	D97163	C64718	E85439	A71625	JC2299	C86189	A97017	F97126	T47993	D64413	F71128
7	7	~	~	~	~	7	~	~	~	7	~	ď	a	~	~
137	209	217	332	428	845	155	261	375	774	1048	281	869	1232	1232	105
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27	27.3	27	27	27	27	26	26	26	56	26	56	56	56	26	56
28	57.5	57.5	57	57	57	56.5	56.5	56.5	56.5	56.5	26	56	56	55.5	22
30	31	32	33	34	.35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT 1 SAHUP sanosin predursor [validated] - human
N;Alternate names: cerebroside sulfate activator protein; co-beta-glucosidase; component (SAP); sphingolipid activator protein A2; sulfatide sulfatase activator protein N;Contains: prosaposin; saposin A; saposin B; saposin C; saposin D
C; Drectes: now, Dartens (man) C; Date: 30-Jun-1992 #sequence_revision 17-Nov-1995 #text_change 08-Dec-2000 C; Accession: JX0061; A57368; A42003; B42003; C42003; D42003; A30367; S34740; S36140; 0226: T37264
R;Nakano, T.; Sandhoff, K.; Stuemper, J.; Christomanou, H.; Suzuki, K. T Hiochem 105, 152-154, 1989
A; Title: Structure of full-length cDNA coding for sulfatide activator, a Co-beta-gluc A; Reference number: JX0061; MUID:89255151; PMID:2498298
A; Accession: JX0061 A; Molecule type: mRNA
A) Residues: 1-34/ STARA A) A SECONDARY SECONDARY BY PIDN:BAA00321.1; PID:9220064
A) Accession: A57368
A; Molecule type: mRNA A; Residues: 1-259, 263-527 <na2></na2>
A; Cross-references: GB:J03015; GB:J03086; NID:g337755; PIDN:AAB59494.1; PID:g337756
A;Note: alternative splice form 2 R.Notran. R. G Scheinker. V . Grahowski. G. A.
Genomics 13, 312-318, 1992
A; Title: Structure and evolution of the human prosaposin chromosomal gene.
A; Accession: A42003
A;Motecute type: DNA A;Residues: 50-140 <ror></ror>
A; Cross references: GB: M86181
A;Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107236) A;Accession: B42003
A; Molecule type: DNA A: Residues: 185-259:263-276 < RO2>
A; Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107237)
A; Modecule type: DNA A; Modecule type: DNA
A; Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107238); sequence
A; Accession: D42003
A;Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107239); sequence R;Rorman, E.G.; Grabowski, G.A.
A;TILLE: Molecular cloning of a numan co-beta glucosidase cuna; evidence that four sp A;Reference number: A30367; MUID:90129043; PMID:2515150
A; Molecule type: mRNA
h; Residues: 1-259, 263-527 <ro5></ro5>

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Biochem. 192, 709-714, 1990
                                                                                                                                                                                                                         A; Molecule type: protein
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A; Cross-references: EMBL:M60258; NID:g337766; PIDN:AAA36596.1; PID:g337767
A; Cross-references: EMBL:M60258; NID:g337766; PIDN:AAA36596.1; PID:g337767
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A; Note: cerebroside sulfate activator protein mutant MU-6; corresponds to alternative sp. R; Kondoh, K.; Hineno, T.; Sano, A.; Kakimoto, Y.
Biochem. Biophys. Res. Commun. 181, 286-292, 1991
A; Title: Isolation and characterization of prosaposin from human milk.
A; Reference number: PS0330; MUID:92068206; PMID:1958198
A;Cross-references: GB:J03077; NID:g183230; PIDN:AAA52560.1; PID:g183231
A;Note: alternative splice form 2
A;Note: Biochem. Biochem. Biochem. Biochem. Biochem. Biochem. Biochem. Biochem. Biochem: Biochem: Biochem: Biochem: Biochem: Biochem: Biochem: Biochem: A;Note: Isolation, characterization, and proteolysis of human prosaposin, the precursor A;Reference number: S34740; MUID:93311991; PMID:8323276
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A; Residues: 17-24, X', 26 <KON>
B; Experimental source: milk
R; Kretz; K.A.; Carson, G.S.; Morimoto, S.; Kishimoto, Y.; Fluharty, A.L.; O'Brien, J.S.
Proc. Natl. Acad. Scl. U.S.A. 87, 2541-2544, 1990
A; Title: Characterization of a mutation in a family with saposin B deficiency: a glycosy A; Reference number: A35985; MUID:90207231; PMID:2320574
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A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Molecule type: mCNA
A; Molecule the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A; Note: cerebroside sulfate activator protein mutant MU-0; corresponds to alternative
A; Accession: S36990
A; Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Note: saposin D
R;Holtschmidt, H.; Sandhoff, K.; Kwon, H.Y.; Harzer, K.; Nakano, T.; Suzuki, K.
J. Biol. Chem. 266, 7556-7560, 1991
A;Title: Sulfatide activator protein. Alternative splicing that generates three mRNAs
A;Reference number: S36988; MUID:91210267; PMID:2019586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Status: nucleic acid sequence not shown; translation not shown
Molecule type: mRNA
Residues: 1-240, 75,242-527 < HOLD.
Gross-references: EMBL:M60255; NID:9337759; PIDN:AAA36594.1; PID:9337760
Gross-references: EMBL:M60255; NID:9337759; PIDN:AAA36594.1; PID:9337760
Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
Note: cerebroside sulfate activator protein mutant MU-9; corresponds to alternative
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A;Residues: 213-216,'I',218-221 <KR3>
A;Note: sequence from patients with activator-deficient metachromatic leukodystrophy;
R;Fuerst, W.; Schubert, J.; Machleidt, W.; Meyer, H.E.; Sandhoff, K.
                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 17-24;165-172;180-189;301-305 <HIR>
A;Residues: J. Palmer. D.N.; Baumann, M.; Haltia, M.
FYTynelae, J.; Palmer. D.N.; Baumann, M.; Haltia, M.
FEBS Lett. 330, 8-12, 1993
A;Title: Storage of saposins A and D in infantile neuronal ceroid-lipofuscinosis.
A;Reference number: S36140; MUID:93380576; PMID:8370464
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A; Residues; 213-21 < KRE>
A; Residues; 213-21 < KRE>
A; Accession: B35985
A; Accession: B35985
A; Status: nucleic acid sequence not shown; translation not shown
A; Molecule type: mRNA
A; Residues: 1-259, 263-527 < KR2>
A; Across-references: GB-M32221; NID:g337761; PIDN:AAA60303.1; PID:g337762
A; Accession: C35985.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Residues: 'XX', 62,'X', 64-65,'X', 67-79,'X', 81-84 <TYY>
A; Note: saposin A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Molecule type: protein
Residues: 'XXX',413-414,'X',416-428,'X',430-434 <TY2>
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A;Title: The complete amino-acid sequences of human ganglioside GM2 activator protein A;Reference number: S13195; MUID:91006165; PMID:2209618
A;Accession: S13196
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A; Mosidues: (60-84;86-107;109-119;125-134 <MOR>
A; Residues: (60-84;86-107;109-119;125-134 <MOR>
K; O'Brien, J.S.; Kretz, K.A.; Dewji, N.; Wenger, D.A.; Esch, F.; Fluharty, A.L.
Science 241, 1098-1101, 1988
A; Title: Coding of two sphingolipid activator proteins (SAP-1 and SAP-2) by same gene
A; Reference number: A41240; MUID:88321660; PMID:2842863
A; Accession: A41240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Note: this sequence corrected by A41240
Note: part of this sequence, including the amino end of the mature protein, was det Kleinschmidt, T.; Christomanou, H.; Braunitzer, G.
101. Chem. Hoppe-Seyler 369, 1361-1365, 1988
Natite: Complete amino-acid sequence of the naturally occurring A(2) activator prote Reference number: $02028; MUID:89207118; PMID:3242555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein
A; Residues: 195-259, 263-276 (KLE>
R; Fuerst, W.; Machleidt, W.; Sandhoiff, K.
Biol. Chem. Hoppe-Seyler 369, 317-328, 1988
A; Title: The precursor of sulfatide activator protein is processed to three different
A; Reference number: S00813; MUID:89000190; PMID:3048308
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A; Molecule type: protein
A; Residues: 314-393 <KLL2.
B; Residues: 314-393 <KLL2.
B; Vaccaro, A.M.; Salvioli, R.; Barca, A.; Tatti, M.; Ciaffoni, F.; Maras, B.; Sicilia J. Biol. Chem. 270, 9953-9960, 1995
A; Title: Structural analysis of Saposin C and B. Complete localization of disulfide b A; Feference number: A57297; MUID: 95247790; PMID: 7730378
A; Contents: annotation; disulfide bonds: glycosylation
R; Holtschmidt, H.; Sandhoff, K.; Fuerst, W.; Kwon, H.Y.; Schnabel, D.; Suzuki, K.
FEBS Lett. 280, 267-270, 1991
A; Title: The organization of the gene for the human cerebroside sulfate activator pro A; Reference number: 137264; MUID: 91192146; PMID: 2013321
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A; Residues: 'GSSR', 18-259, 263-299,'D',301-302,'D',304-527 <0AB>
A; Residues: 'GSSR', 18-259, 263-299,'D',301-302,'D',304-527 <0AB>
B; Devos references: GB:J03086
B; Devos Natl. Acad. Sci. U.S.A. 84, 8652-8656, 1987
A; Title: Nucleoctide sequence of cloned cDNA for human sphingolipid activator protein
A; Reference number: S02289; MUID:88068647; PMID:2825202
A; Accession: S02289
                                                                                                                                                                                  A; Residues: '15-259,263-277 <FUE>
A; Residues: '15-259,263-277 <FUE>
R; Morimoto, S.; Martin, B.M.; Yamamoto, Y.; Kretz, K.A.; O'Brien, J.S.; Kishimoto, Aproc. Natl. Acad. Sci. U.S.A. 86, 3389-3393, 1989
A; Title: Saposin A: second cerebrosidase activator protein.
A; Reference number: A32784; MUID:89240739; PMID:2717620
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A;Nolecule type: DNA
A;Residues: 59-125 <RES>
A;Cross-references: EMBL:X57107; NID:g30234; PIDN:CAA40391.1; PID:g30235
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A; Residues: 410-487 <PU2>
R; Rleinschmidt, T.; Christomanou, H.; Braunitzer, G.
Biol. Chem. Hoppe-Seyler 368, 1571-1578, 1987
A; Title: Complete amino-acid sequence and carbohydrate c
A; Reference number: S00226; MUID:88163077; PMID:3442600
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A Pastription: saposins bind sphingolipids, form hydrophilic complexes and make them A:Pathway: sphingolipid catabolism
A:Pathway: sphingolipid catabolism
A:Note: saposins A and C (SAD-1) activate hydrolysis of glucocerebroside by beta-gluc A:Note: saposin B (SAD-1) activates hydrolysis of galactocerebroside sulfate by arris A:Note: saposin D activates hydrolysis of sphingomyelin by sphingomyelin phosphodiest C:Superfamily: saposin repeat homology
C:Keywords: alternative splicing; glycoprotein; lysosomal storage disease; lysosome; F:1-16/Pomain: signal sequence fistus predicted <SIG>
F:17-557/Product: prosaposin #status predicted <PRO>
F:55-148/Domain: saposin A #status predicted <SAD>
F:60-143/Product: saposin Repeat homology <SAPA>
F:60-143/Product: saposin repeat homology <SAPA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;80,214,331,456/Binding site: carbohydrate (Asn) (covalent) #status predicted
F;197-270,200-264,229-240,314-387,317-381,345-356/Disulfide bonds: #status predicted
             C;Accession: A28716

R;Collard, M.W.; Sylvester, S.R.; Tsuruta, J.K.; Griswold, M.D.

Biochemistry 27, 4557-4564, 1988

A;Title: Blosynthesis and molecular cloning of sulfated glycoprotein 1 secreted A;Reference number: A28716; MUID:89000647; PMID:3048385

A;Accession: A28716
                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-554 <COL>
A;Cross-references: GB:M19936; NID:g206904; PIDN:AAA42136.1; PID:g206905
A;Note: parts of this sequence, including the amino end of the mature protein,
C;Function:
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
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A;Realdues: 1-57 CTSD-
A;Cross-references: GB:536200; NID:g249386; PIDN:AAB22175.1; PID:g249387
A;Experimental source: liver
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Best Local Similarity 36.8%; Pred. No. 0.0034;
Matches 14; Conservative 14; Mismatches 10; Indels
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C.Species: Cavia porcellus (guinea pig)
C.Sacession: A32026
R.Sano, A.; Radin, N.S.; Johnson, L.L.; Tarr, G.E.
J. Biol. Chem. 263, 19597-19601, 1988
A.Title: The activator protein for glucosylceramide beta-glucosidase from guinea pig liv
A.Feference number: A32026
A.Accession: A32026
A.Accession: A32026
A.Accession: A32026
A.Roceule type: protein
A.Residues: 1-81 <SAN>
C.Superfamily: saposin; saposin repeat homology <SAP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saposin-C - bowine
C.Species: Bos primigenius taurus (cattle)
C.Species: Salorius S21770
R.Sano, A.: Mizuno, T.: Kondoh, K.; Hineno, T.: Ueno, S.: Kakimoto, Y.: Morita, N.
B.Scohin. Blophys. Acta 1120, 75.80, 1992
A.:Title: Saposin-C from bowine spleen; complete amino acid sequence and relation between A.Sterence number: S21770
A.Sterence number: S21770
A.Sterence number: S21770
A.Sterence preliminary
A.Sterence preliminary
A.Sterence protein
A.Residues: 1-80 <SAN>
C.Superfamily: saposin; saposin; repeat homology
                A;Cross-references: GDB:120366; OMIM:176801
A;Map position: 10q22.1-10q22.1
A;Map position: 83/3; 338/3; 480/3; 480/3
A;Introns: 83/3; 338/3; 401/1; 453/3; 480/3
A;Note: defects in this gene may cause variant Gaucher disease, variant Tay-Sachs disease A;Note: list of introns is incomplete
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Matches 20; Conserv
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saposin precursor
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Gaps

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A.Cross-references: EMBL:X69193
C.Comment: The pair of saposin repeat homology domains tagged SAP1 and SAP2 represent
C.Scuperfamily: oryzasin; saposin repeat homology
C.Superfamily: oryzasin; saposin repeat homology *status atypical <SAP1>
F;236-281/Domain: saposin repeat homology *status atypical <SAP2>
F;237.210/Active site: Asp *status predicted
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A;Title: Molecular cloning of a cDNA encoding a silkworm protein which contains the A;Feference number: Z14124; MUID:98278844; PMID:9611271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary: translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Residues: 1-965 < TAM>
A; Residues: 1-965 < TAM>
A; Cross-references: EMBL: AB008449; NID: 92575864; PIDN: BAA23126.1; PID: 92575865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Bombyx mor1 (silkworm)
C;Date: 22-Jan-1999 #sequence_revision 22-Jan-1999 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Modlecule type: mRNA
A;Residues: 1-47 < COR>
A;Cross-references: EMBL:X69193; NID:9499015; PIDN:CAA48939.1; PID:9509163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2; Length 428;
0.15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | | :|: | : | | :|: ||: || :| || 345 DEMCTMCQMAVVWMQNQIRQNETEENIINYVDKLCERLP 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299 DEMCTMCQMAVVWMQNQIRQNETEENIINYVDKLCERLP 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
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Pred. No. 0.34;
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C; Superfamily: oryzasin; saposin repeat homology
C; Keywords: aspartic proteinase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                           37.0%; Score 78; DB
35.9%; Pred. No. 0.15
tive 9; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cyprosin (EC 3.4.23.-) - cardoon (fragment)
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38.9%;
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Matches 14; Conserv
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Best Local Similarity
Matches 14; Conserv
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A. Cross-references: DBJ:D12777; NID:9218142; PIDN:BAA02242.1; PID:9218143
A. Cross-references: DBJ:D12777; NID:9218142; PIDN:BAA02242.1; PID:9218143
A. Cross-references: DBJ:D12777; NID:9218142; PIDN:BAA02242.1; PID:9218143
A. Rapatura, T.; Abe, K.; Arai, S.
Blosci. Blotechnol. Blochem. 59, 1793-1794, 1995
Blosci. Blotechnol. Blochem. 59, 1793-1794, 1995
A. Title: Evidence for the occurrence of multiple aspartic proteinases in rice seeds. A. Reference number: PC4079
A. A. Cross-references: DBJ:D1277
A. Residues: 189-468
A. Residues: 189-488
A. 
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F;194-276/Product: saposin B #status predicted <SAB1>
F;309-400/Domain: saposin repeat homology <SAP3>
F;313-392/Product: saposin C #status predicted <SAPC>
F;434-525/Domain: saposin repeat homology <SAPC>
F;444-525/Domain: saposin repeat homology <SAP4>
F;440-517/Product: saposin D #status predicted <SAPD>
F;63-138,66-132,94-106,197-273,200-267,229-240,317-390,320-384,348-359,442-515,445-509,F;80,214,334,379,459/Binding site: carbohydrate (Asn) (covalent) #status predicted
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Cispecies: Cynara cardunculus (cardoon)
Cispecies: Gynara cardunculus (cardoon)
Cispecies: J3-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 29-Aug-1997
Ciscossion: S47096
Ricordeiro, M.C.; Xue, Z.T.; Pietrzak, M.; Pais, M.S.; Brodelius, P.
Ricordeiro, M.C.; Xue, Z.T.; Pietrzak, M.; Pais, M.S.; Brodelius, P.
A: Description: Tissue specific expression of cynarase (s) genes in flowers of Cynara (A) Reference number: S47096
A; Reference preliminary
A; Molecule type: mRNA
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C;Species: Orgas asativa (itce)
C;Date: 16-Sep-1992 #sequence_revision 16-Sep-1992 #text_change 20-Jun-2000
C;Accession: JS0732; PC4079
R;Hashimntor, H:; Nibhi, R:; Uchimiya, H:; Kato, A.
aubmitted to JTPID, August 1992
A;Reference number: JS0732
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C; Keywords: aspartic proteinase; hydrolase; seed
F;308-353/Domain: saposin repeat homology #status atypical <SAPI>
F;362-407/Domain: saposin repeat homology #status atypical <SAP2>
F;95,282/Active site: Asp #status predicted
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Pred. No. 0.1;
                                                                                                                                                                                                                                                                                                                                                                                                        40.3%; Score 85; DB 1; Length 557, 45.9%; Pred. No. 0.03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0.03;
8; Mismatches 12; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :||||:|| : :: | |::|| | :| || || 441 FCEVCKKLVLYLEHNLEKNSTKEEILAALEKGCSFLP 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 YCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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Best Local Similarity 37.5%;
Matches 15; Conservative
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A; Status: translation not shown
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Matches 17; Conservative
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A; Introns: 116/3; 137/1; 168/3; 206/2; 262/3; 276/1; 297/3; 335/3; 357/2; 409/3; 449/
C; Superfamily: oryzasin; saposin repeat homology
C; Keywords: aspartic proteinase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rid Arcy-Lameta, A.; Zuily-Fodil, Y.; Pham Thi, A.T.; Ferrari-Illou, R. submitted to the EMBL Data Library, June 1996
A; Description: Molecular cloning and nucleotide sequence of a cDNA encoding an aspart
R;D'Hondt, K.; Stack, S.; Gutteridge, S.; Vandekerckhove, J.; Krebbers, E.; Gal, S. Plant Mol. Biol. 33, 187-192, 1997
A;Title: Aspartic proteinase genes in the Brassicaceae Arabidopsis thaliana and Brass A;Reference number: Z16211; MUID:97188586; PMID:9037171
A;Accession: T07915
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                          A;Residues: 1-506 <DHO>
A;Cross-references: EMBL:U55032; NID:g1326164; PIDN:AAB03108.1; PID:g1326165
C;Genetics:
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C:Species: Brassica oleracea (wild cabbage)
C:Species: Brassica oleracea (wild cabbage)
C:Sate: 20-Sep-1999 #sequence_revision 20·Sep-1999 #text_change 02-Jun-2000
C:Accession: T14446
R:Fujikura, X
submitted to the EMBL Data Library, March 1994
A:Reference number: 218095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aspartic proteinase (EC 3.4.23.-) - cowpea
C;Species: Vigna unguiculata (cowpea)
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 16-Jul-1999
C;Accession: T11686
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Pred. No. 0.52;
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A.Experimental source: strain 1183
C.Superfamily: oryzasin; saposin repeat homology
C.Keywords: aspartic proteinase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X77260; NID:9459425; PID:9459426
A;Experimental source: cultivar Alpha Paloma; root tips
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384 DAGCSACEMAVVWVQNQLSRNQTQDQILSYVNQLCDKMP 422
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illarity 33.3%; Pred. No. 0.52;
Conservative 8; Mismatches 1:
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Pred. No. 0.51;
9; Mismatches 1
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A;Molecule type: mRNA
A;Residues: 1-292 <FUJ>
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C; Superfamily: oryzasin; saposin repeat homology
C; Keywords: aspartic proteinase; hydrolase
                                                                                                                                                                                                                                                                                                                                                                                          7; Mismatches
                                                                                                                                                                                                                                                                                                                                          35.1%;
illarity 33.3%;
Conservative
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Best Local Similarity 30.8%;
Matches 12; Conservative
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A; Accession: T11686
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nes 13; Conserv
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Matches 13; Conserv
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                                                                   A; Molecule type: mRNA
A; Molecule type: mRNA
A; Cross-references: 1-280 < AsA>
A; Cross-references: DDBJ:D12777
A; Experimental source: seeds
C; Comment: This is a multigene family.
C; Comment: The pair of saposin repeat homology domains tagged SAP1 and SAP2 represent c; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Organ sativa (rice)
C;Species: Organ sativa (rice)
C;Date: 29-Nov-1995 #sequence_revision 08-Feb-1996 #text_change 29-Aug-1997
C;Accession: Pc4080
R;Asakura, T.; Abe, K.; Arai, S.
Blosci. Biotechnol. Biochem. 59, 1793-1794, 1995
A;Title: Evidence for the occurrence of multiple aspartic proteinases in rice seeds.
A;Reference number: Pc4079; MUID:96014423; PMID:8520124
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C;Date: 21-May-1999 #sequence_revision 21-May-1999 #text_change 11-May-2000
C;Accession: T07915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             aspartic proteinase (EC 3.4.-.-) L5 - rice (fragment)
C;Species: Oryza sativa (rice)
C;Date: 29-Nov-1995 #sequence_revision 08-Feb-1996 #text_change 29-Aug-1997
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C. Keywords: aspartic proteinase; hydrolase; seed
F;120-165/Domain: saposin repeat homology #status atypical <SAPI>
F;174-219/Domain: saposin repeat homology #status atypical <SAP2>
F;94/Active site: Asp #status predicted
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Pred. No. 0.29;
9; Mismatches 17; Indels
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N.Alternate names: aspartic protease
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35.0%;
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Them 14; Conservative
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2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40

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Aspartic proteinase (EC 3.4.23.-) - wild cabbage (fragment)

N.Alternate names: aspartyl protease
C;Species: Brassica oleracea (wild cabbage)
C;Date: (06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 29-Aug-1997
C;Accession: 841400
R;Fulikura, Y.; Karssen, C.M.
submitted to the EMBL Data Library, January 1994
A;Description: Cauliflower cDNA with sequence homology to gastric proteases.
A;Reference number: $41400
A;Reference number: $41400
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-322 <FUJJ-
A;Cross-references: EMBL:X77260
C;Comment: The pair of saposin repeat homology domains tagged SAP1 and SAP2 represent a
C;Superfamily: oryzasin; saposin repeat homology
C;Keywords: aspartic proteinase; hydrolase
C;Superfamily: apposin repeat homology #status atypical <SAP1>
F;153-203/Domain: saposin repeat homology #status atypical <SAP2>
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163 DAACSACEMAVWIQSQLRQNWTQERILDYVNELCRRIP 201
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Search completed: June 2, 2003, 14:16:19 Job time : 16.359 secs

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GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on:

June 2, 2003, 14:14:13 ; Search time 7.17949 Seconds (without alignments) 231.082 Million cell updates/sec

Title: Perfect score: Sequence:

US-09-780-438C-1 211 1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892 seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt_40:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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SUMMARIES	ID	SAP_HUMAN	SAP_BOVIN	SAP_CAVPO	SAP_CHICK	SAP_RAT	SAP_MOUSE	ASPR_ORYSA	ASPR_HORVU	APR1_ORYSA	ASPR_CUCPE	CYP1_CYNCA	MATK_TORCL	Y890_METJA	YF87_HELPJ	YF87_HELPY	Y795_PYRHO	YO85_CAEEL	O85C_DROME	ARPL_DROME	KITH_MYCGE	V17_BPT7	TCPE_CAEEL	YA50_HAEIN	ARP3_YEAST	VNS1_BMDNV	E2BD_MOUSE	FAS_PNECA	RR19_NICBI	RR19_TOBAC	YF40_PYRAB	NKL_PIG	MT04_CAMJE	5HT1_APLCA
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22 22 23 23 25 25 25 25 25 25 25 25 25 25 25 25 25
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ALIGNMENTS

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Fluharty A.L., Lombardo C., Louis A., Stevens R.L., Whitelegge J., Waring A.J., To T., Fluharty C.B., Faull K.F.; "Preparation of the cerebroside sulfate activator (CSAct or saposin B)
                                                                                                                                                                                                                                                                                                                                MEDLINE-89207118; PubMed-3242555; Kleinschmidt T., Christomanou H., Braunitzer G.; "Complete amino-acid sequence of the naturally occurring A2 activator protein for enzymic sphingomyelin degradation: identity to the sulfatide activator protein (SAP-1)."; Biol. Chem. Hoppe-Seyler 369:1361-1365(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-88163077; PubMed-3442600;
Kleinschmidt T., Christomanou H., Braunitzer G.;
"Complete amino-acid sequence and carbohydrate content of the naturally occurring glucosylceramide activator protein (Al activator) absent from a new human gaucher disease variant.";
Biol. Chem. Hoppe-Seyler 368:1571-1578(1987).
                                                                                                                                                                                                                                        MEDIINE-2006165; PubMed-2209618;
Furst W., Schubert J., Machleidt W., Meyer H.E., Sandhoff K.;
"The complete mainto-acid sequences of human ganglioside GM2 activator
protein and cerebroside sulfate activator protein.";
Eur. J. Blochem. 192:709-714(1990).
                                                                                                                                       Dewji N.N., Wenger D.A., Fujibayashi S., Donoviel M., Esch F.,
Hill F., O'Brien J.S.;
"Molecular cloning of the sphingolipid activator protein-1 (SAP-1),
the sulfatide sulfatase activator.";
Biochem. Biophys. Res. Commun. 134:989-994(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDINE-89000190; PubMed-3048308;
Furst W., Machleidt W., Sandhoff K.;
The precursor of sulfatide activator protein is processed to three
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-92068206; PubMed-1958198;
Kondoh K., Hineno T., Sano A., Kakimoto Y.;
"Isolation and characterization of prosaposin from human milk.";
Biochem. Biophys. Res. Commun. 181:286-292(1991).
                                                 Morimoto S., Martin B.M., Yamamoto Y., Kretz K.A., O'Brien J.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PARTIAL SEQUENCE (SAPOSIN B), AND STRUCTURE OF CARBOHYDRATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRUCTURE OF CARBOHYDRATE ON ASN-215.
MEDLINE-21110404; PubMed-11180632;
Faull K.F., Johnson J., Kim M.J., To T., Whitelegge J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PARTIAL SEQUENCE OF 405-484.

MEDLINE-89025875; PubMed-2845979;
Morimoto S., Martin B.M., Kishimoto Y., O'Brien J.S.;
"Saposin D: a sphingomyelhase activator.";
Blochem. Biophys. Res. Commun. 156:403-410(1988).
                                                                           "Saposin A: second cerebrosidase activator protein.";
Proc. Natl. Acad. Sci. U.S.A. 86:3389-3393(1989).
Proc. Natl. Acad. Sci. U.S.A. 84:8652-8656(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biol. Chem. Hoppe-Seyler 369:317-328(1988).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-20032116; PubMed-10562467;
                                                                                                                SEQUENCE OF 195-263 FROM N.A. MEDLINE-86130593; Pubmed-2868718;
                      PARTIAL SEQUENCE OF 60-142.
MEDLINE-89240739; Pubmed-2717620;
                                                                                                                                                                                                                  SEQUENCE OF 195-274.
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                                                               Kishimoto Y.;
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by the sequential action of specific hydrolases. Some of these enzymes require specific low-molecular mass, non-enzymic proteins: the sphingolipids activator proteins (coproteins).

-I- FUNCTION: Saposin A and saposin C stimulate the hydrolysis of glucosylecramide by beta-glucosylecramidase (EC 3.2.145) and galactosylecramide by beta-glactosylecramidase (EC 3.2.146).

Saposin C apparently acts by combining with the enzyme and acidic lipid to form an activated complex, rather than by solubilizing
                                                                                  porcine kidney and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sphingolipid hydrolases.
--- FUNCTION: Saposin D is a specific sphingomyelin phosphodiesterase activator (EC 3.1.4.12).
--- SUBUNIT: Saposin B is a homodimer.
--- SUBCELLULAR LOCATION: Lysosomal.
--- ALTERNATIVE PRODUCTS: At least 3 isoforms; sap-mu-0 (shown here),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein 2 in a patient with a
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-99441404; PubMed=10510427;
Faull K.F., Whitelegge J.P., Higginson J., To T., Johnson J.,
Krutchinsky A.N., Standing K.G., Waring A.J., Stevens R.L.,
Fluharty C.B., Fluharty A.L.;
"Cerebroside sulfate activator protein (Saposin B): chromatographic
and electrospray mass spectrometric properties.";
J. Mass Spectrom 34:1040-1054(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-90147748; PubMed-2302219; MERGI M.A., Zhang X.-L., Degala G., Wenger D.A.; marging X.-L., Degala G., Wenger D.A.; point mutation in sphingolipid activator protein-1 mRNA in patients with a variant form of metachromatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kretz K.A., Carson G.S., Morimoto S., Kishimoto Y., Fluharty A.L.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Sulfatide activator protein. Alternative splicing that generates three mRNAs and a newly found mutation responsible for a clinical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VARIANT MLD SER-241, SEQUENCE FROM N.A., AND ALTERNATIVE SPLIC
MEDLINE-91210267; PubMed-2019586;
Holtschmidt H., Sandhoff K., Kwon H.Y., Harzer K., Nakano T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Characterization of a mutation in a family with saposin B deficiency: a glycosylation site defect.";
Proc. Natl. Acad. Sci. U.S.A. 87:2541-2544(1990).
Stevens R.L., Fluharty C.B., Fluharty A.L.; "Structure of the asparagine-linked sugar chains of phuman urine cerebroside sulfate activator protein."; Mass Spectrom. 35:1416-1424(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Biochem. Blophys. Res. Commun. 166:1017-1023(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., AND VARIANT MLD ILE-217.
MEDLINE-90207231; PubMed-2320574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT GAUCHER PHE-388.
MEDLINE-91285107; PubMed-2060627;
Schnabel D., Schroeder M., Sandhoff K.;
"Mutation in the sphingolipid activator variant of Gaucher disease.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J. Biol. Chem. 266:7556-7560(1991).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WARIANT MLD ILE-217
                                                                                                                                                                                                                                            MASS SPECTROMETRY.
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SAP_CAVPO
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MEDLINE-92207994; PubMed-1554743;
Sano A., Mizuno T., Kondoh K., Hineno T., Ueno S.-I., Kakimoto Y.,
Amorita N.;
Saposin-C from bovine spleen; complete amino acid sequence and
relation between the structure and its biological activity.";
Electron. THE LYSOSOMAL DEGRADATION OF SPHINGOLIPIDS TAKES PLACE
BY THE SEQUENTIAL ACITION OF SPECIFIC HYDROLASES. SOME OF THESE
CRNZYMES REQUIRE SPECIFIC LOW-MOLECULAR MASS, NON-ENZYMIC PROTEINS:
THE SPHINGOLIPIDS ACTIVATOR PROTEINS (COPROTEINS) (BY SIMILARITY).
CHENCYLON: SAPOSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF
GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
GLACTOSYLCERAMIDE BY BETA-GALACTOSYLCERAMIDASE (EC 3.2.1.46).
SAPOSIN-C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC
LIPLD TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBLIZING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EWBL outstation the European Bioinformatics Institute. There are no restrictions on its
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SAPOSIN B FORMS A SOLUBILIZING COMPLEX WITH THE SUBSTRATES OF THE SPHINGOLIPID HYDROLASES (BY SIMILARITY).
-I. FUNCTION: SAPOSIN D IS A SPECIFIC SPHINGOMYELIN PHOSPHODIESTERASE ACTIVATOR (EC 3.1.4.12) (BY SIMILARITY).
-I. SUBGRIT: SAPOSIN B IS A HOMODIMER (BY SIMILARITY).
-I. SUBGRITIS PRECURSOR IS PROTEDIZICALLY PROCESSED TO 4 SMALL PERTIDES, WHICH ARE SIMILAR TO EACH OTHER AND ARE SPHINGOLIPID HYDROLASE ACTIVATOR PROTEINS (BY SIMILARITY).
                                            Gaps
                                                                                                                                                                             PRT; 525 AA.
P26779; QNRG4;
P26779; QNRG4;
10-AUG-1992 (Rel. 23, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
16-OCT-2001 (Rel. 40, Last annotation update)
Proactivator polypeptide precursor (Contains: Saposin A (Protein A);
Saposin B (Sphingolipid activator protein 1) (SAP-1) (Cerebroside sulfate activator) (CSAct) (Dispersin) (Sulfatide/GMI activator);
Saposin C (Co-bere-glucosidase) (Al activator) (Glucosylceramidase activator) (Sphingolipid activator protein 2) (SAP-2); Saposin D
                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                            ö
            Length 524;
                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND VARIANTS.

TISSUE-Mammary gland;
Azuma N., Yoshida K.;
"RT-FCR cloning of bovine prosaposin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                       311 SDVYCEYCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 350
                                                                         40
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                                                                         1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
            100.0%; Score 211; DB 1; 100.0%; Pred. No. 8.4e-18;
                                          0; Mismatches
                           100. Similarity 100. 40; Conservative
                                                                                                                                                                                                                                                                                                                                                                   Bos taurus (Bovine).
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            Query Match
                            Best Local
Matches 4
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            and for commercial
use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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SAPOSIN B.
SAPOSIN C.
SAPOSIN C.
SAPOSIN C.
SAPOSIN C.
SAPOSIN-LIKE TYPE A 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE B 5.
BY SIMILARITY
BY SIM
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P2009;
P2009;
P2009;
D1-FEB-1991 (Rel. 17, Created)
D1-FEB-1991 (Rel. 17, Last sequence update)
D1-FEB-1991 (Rel. 40, Last annotation update)
Saposin C (CO-beta-glucosidase) (Glucosylceramidase activator)
Saposin C (CO-beta-glucosidase) (Glucosylceramidase activator)
CSphingoliphi activator protein 2) (SAP-2).
Cavia porcellus (Guinea pig).
Eukaryota: Metazca; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                                                                                                                          e; Sphingolipid metabolism; Repeat. POTENTIAL.
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Pred. No. 1.6e-13;
6; Mismatches 3; Indels
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-> S (IN REF. 1)
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PIR; S21770; S21770.
InterPro; IPR0001119; SapA.
InterPro; IPR0000004; SapB.
Pfam; PF02199; SAPA; 2.
SMART; SM00162; SAPB; 4.
SMART; SM00118; SAPB; 4.
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77.5%;
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Best Local Similarity 77,55
These 31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                       Signal; Glycoprotein;
SIGNAL 1
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367
367
525 AA;
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TISSUE-Liver;
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CONFLICT
CONFLICT
SEQUENCE
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CARBOHYD
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Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.

1. FUNCTION: THE LYSOSOMAL DESCRADATION OF SPHINGOLIPIDS TAKES PLACE
BY THE SEQUENTIAL ACTION OF SPECIFIC HYDROLASES. SOME OF THESE
ENZYMES REQUIRE SPECIFIC LOW-MOLECULAR MASS, NON-ENZYMIC PROTEINS:
THE SPHINGOLIPIDS ACTIVATOR PROTEINS (COPROTEINS) (BY SIMILARITY).

1. FUNCTION: SAPOSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF
GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
GALACTOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.46).
SAPOSIN C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC
LIPID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
THE SUBSTRATE (BY SIMILARITY).

1. FUNCTION: SAPOSIN B STIMULATES THE HYDROLYSIS OF GALACTO-
                                               Sequence. F;
J. Biol. Chem. 263:19597-19601(1988).

J. Biol. Chem. 263:19597-19601(1988).

-i-FUNCTION: SAPOSIN A AND. SAPOSIN C STIMULATE THE HYDROLYSIS OF GLOCOSYLCERAMIDASE (EC 3.2.1.45) AND GALACTOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.46).

SAPOSIN-C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC LIPID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-98129745; PubMed-9461526; Azuma N., Seo H.-C., Lie O., Fu Q., Gould R.M., Hiraiwa M., Burt D.W., Paton I.R., Morrice D.R., O'Brien J.S., Kishimoto Y.; Cloning, expression and map assignment of chicken prosaposin."; Biochem. J. 330:321-327(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                   Gaps
            Sano A., Radin N.S., Johnson L.L., Tarr G.E.; "The activator protein for glucosylceramide beta-glucosidase from guinea pig liver. Improved isolation method and complete amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Proactivator polypeptide precursor [Contains: Saposin A; Saposin B;
                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                       Length 81;
                                                                                                                                                                                                                                                                                                                                                                 7; Indels
                                                                                                                                                                                                                                              SAPOSIN-LIKE TYPE B.
N-LINKED (GLCNAC. ..).
BY SIMILARITY.
BY SIMILARITY.
E564CE1F0A292596 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                           3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                         THE SUBSTRATE.
-1- SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
PIR., A32026, A32026.
HSSP, P42210; 10DM.
HSSP, P42210; 10DM.
FINCEPRO, PROBOUG4; SapB.
PTODOM; PDO01732; SapB.
SMART; SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                       Score 119; DB 1;
Pred. No. 9.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND SEQUENCE OF 194-203. TISSUE-Brain, and Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    518 AA.
                                                                                                                                                                                                                                                                                                                                                    ; Pred. No. 9.9e
11; Mismatches
                                                                                                                                                                                                                                Glycoprotein; Sphingolipid metabolism.

DOMAIN

1 81 SAPOSIN-L
CARBOHYD 22 22 N-LINKED
MEDLINE-89066787; PubMed-3198642;
                                                                                                                                                                                                                                                                                                                                       56.48;
                                                                                                                                                                                                                                                                                                               8852 MW;
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                                                                                                                                                                                                                                                                                                                                                    Similarity
20; Conser'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                               81 AA;
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          Gaps
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InterPro; IPR003119; SapA.
Pfar; PF02199; SAPA; 2.
ProDom; PF001732; SapB; 4.
SMART; SM0018; SAPA; 2.
SMART; SM00118; SAPB; 4.
Signal; Glycoprotein; Lysosome; Sphingolipid metabolism; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
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CEREBROSIDE SULFATE BY ARYLSULFATASE A (EC 3.1.6.8),
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E -> D (IN REF. 2).
B803000E891C3963 CRC64;
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SAPOSIN LIKE TYPE B 1
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52.8%; Pred. No. 1.4e-05;
ive 9; Mismatches 8;
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                                                                                        Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                               TISSUE-Testicle;
MEDIINE-29615245; PubMed-8601692;
MEDISONE-29615245; PubMed-8601692;
MORABLES C.R., El-Alfy M., Zhao Q., Igdoura S.A.;
"Expression and tissue distribution of rat sulfated glycoprotein-1
                                                                                                                                                                                                                                                      MEDILINE-56128541; PubMed-8573994;
Morales C.R., El-Alfy M., Zhao Q., Igdoura S.A.;
Moralus role of sulfated glycoprotein-1 (SGP-1/prosaposin) in Sertoli cells.";
Histopathol. 10:1023-1034(1995).
                                                                                                                                         SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
TISSUE-Sertoli cells;
MEDLINE-89000647; PubMed-3048385;
Collard M.W., Sylvester S.R., Tsuruta J.K., Griswold M.D.;
"Blosynthesis and molecular cloning of sulfated glycoprotein 1 serzeed by rat Sertoli cells; sequence similarity with the 70-kilodalton precursor to sulfatide/GMI activator.";
Blochemistry 27:4557-4564(1988).
                  SAP_RAT STANDARD; PRT; 554 AA. P10960, 962841; 054190; 054190; 01-JUL-1989 (Rel. 11, Created) 01-JUL-1989 (Rel. 11, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Sulfated glycoprotein 1 precursor (SGP-1) (Prosaposin). PSAP OR SGPI.
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SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 3.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE A 2.
BY SIMILARITY.
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InterPro: IPR003119; SapA.
InterPro: IPR001019; SapA.
ProDom; PF02199; SAPA; 2.
ProDom; PM01732; SapB; 4.
SWART; SW0016; SAPA; 2.
SWART; SW00118; SAPB; 4.
Sulfation; Signal; Glycoprotein; Repeat.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M19936; AAA42136.1; -.
EMBL; S81353; AAB36042.2; -.
EMBL; S81373; AAB36233.2; -.
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391
391
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                                                                                                                       NCBI_TaxID-10116;
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N-LINKED (GLCNAC. ...) (POTENTIAL).

N-N (IN REF. 2).

I -> V (IN REF. 2).

N-N (IN REF. 3).

N-N (IN REF. 3).
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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MEDLINE-96084310; PubMed-8565332;
Cao Q.P., Crain W.R.;
"Expression of SGP-1 mRNA in preimplantation mouse embryos.";
Dev. Genet. 17:263-271(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-94272317; PubMed-8003952; Sprecher-Levy H., Orr-Urtreger A., Lonai P., Horowitz M.; Sprecher-Levy H., Orr-Urtreger A., Lonai P., Horowitz M.; Muline prosaposin: expression in the reproductive system implicated in human genetic disease."; Cell. Mol. Biol. 40:233-233(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44.1%; Score 93; DB 1; Length 554;
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ss 10; Indels
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061207; 064219; 0640061;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
16-067-2001 (Rel. 40, Last annotation update)
Sulfated glycoprotein 1 precursor (SGP-1) (Prosaposin).
PSAP OR SGPI)
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Tsuda M., Sakiyama T., Endo H., Kitagawa T.;
"The primary structure of mouse saposin.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Pred. No. 0.000
14; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                       61123 MW;
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Matches 14; Conservative 1
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SEQUENCE FROM N.A.
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use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
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SULFATED GLYCOROTEIN 1.
SAPOSIN-LIKE TYPE A 1.
SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 3.
SAPOSIN-LIKE TYPE B 4.
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134593E20499E35E CRC64;
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MS -> CA (IN REF. 3).
V -> L (IN REF. 3).
L -> W (IN REF. 3).
L -> W (IN REF. 2).
MISSING (IN REF. 3).
M -> L (IN REF. 2).
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M -> L (IN REF. 2).
F -> L (IN REF. 2).
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Pred. No. 0.0081;
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                                                                61422 MW;
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llarity 45.9%;
Conservative
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RESULT

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01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
15-Dhytepsin precursor (EC 3.4.23.40) (Aspartic proteinase).
Hordeum vulgare (Barley). 3.4.23.40) (Aspartic proteinase).
Bukaryota; Viridiplantee; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae;
Triticeae; Hordeum.
                                                                                                                                                                                                                  Aspartic proteinase precursor (EC 3.4.23.-).
Oryza sativa (Rice).
Sukaryota, Viridiplantae, Streptophyta, Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzea.
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Pfam; Pr00026; asp; 1.

Pr00075; PR00792; PEPSIN.

Probom; P000118; SapB; 1.

SMART; SM00118; SAPB; 2.

PROSITE; PS00141; ASP_PROTEASE; 2.

Hydrolase; Aspartyl protease; Zymogen; Glycoprotein; Signal,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
Hashimoto H., Nishi R., Uchimiya H., Kato A.;
Hashimoto (MG-1992) to the EMBL/GenBank/DDBJ databases.
-- SIMILARITY: BELONGS TO PEPTIDASE FAMILY Al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366 SDAMCSVCEMAVVWIENQLRENKTKELILNYANQLCERLP 405
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                                                                                     01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
496 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEROPS; A01.020; ...
Interpro; IPR001461; AspproteaseA1.
Interpro; IPR001969; Aspprotease_site.
Interpro; IPR000004; SapB.
    PRT;
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37.5%;
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Best Local Similarity 37.5
Matches 15; Conservative
    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
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496
408
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387
496 AA;
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NCBI_TaxID=4513;
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1D ASPR HORVU

1D ASPR HORVU

DT 01-NOV

DT 15-JUN

DE PHYTEP

DE PHYTEP

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OC EURATU

OC SPERMA

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35.0%;

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Best Local Similarity 35.0 Matches 14; Conservative
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                                                                                                                                                                      RESULT 9
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                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-99335466; PubMed-10406799;
Kervinen J., Tobin G.J., Costa J., Waugh D.S., Wlodawer A., Zdanov A.;
"Crystal structure of plant aspartic proteinase prophytepsin:
inactivation and vacuolar targeting.";
EMBO J. 18:3947-3955(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATALYTIC ACTIVITY: Prefers hydrophobic residues Phe, Val, Ile, Leu, and Ala at Pl and Pl', but also cleaves 'Phe-1-Asp- and -Asp-1-Asp- bonds in 28 albumin from plants seeds.
SUBUNIT: HETEROIMER OF TWO SUBUNITS (29 kDa AND 11 kDa) PROCESSED FROM THE PRECURSOR MOLECULE. A LARGE ENZYME (32 kDa AND 16 kDa) IS
                                                                                                                                                                                 SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
STRAIN=cv. Kustaa; TISSUE=Embryo;
MEDLINE=92254717; PubMed=1812727;
Toermaekangas K., Runeberg-Roos P., Oestman A., Tilgmann C.,
Sarkkinen P., Kervinen J., Mikola L., Kalkkinen N.;
"Aspartic proteinase from barley seeds is related to animal cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPECIFIC TO PLANT ASPARTIC PROTEINASES. CLEAVAGE.
                                      STRAIN-cv. Kustaa; TISSUE-Embryo;
MEDLINE-92111473; PubMed-1722454;
Runeberg-Roos P., Toermaekangas K., Oestman A.;
*Primary structure of a barley-grain aspartic proteinase. A plant
aspartic proteinase resembling mammalian cathepsin D.*;
Eur. J. Blochem. 202:1021-1027(1991).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS: PRO0792; DEPSIN.
PRINTS: PR00792; PEPSIN.
PRODOM; PD0101732; SapB; 1.
SMART; SM00118; SAPB; 2.
FROSTE; PS00141; ASP_ROTEASE; 2.
Hydrolase; Aspartyl protease; Zymogen; Glycoprotein; Signal;
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PHYTEPSIN 29 KDA SUBUNIT.
PHYTEPSIN 16 KDA SUBUNIT.
PHYTEPSIN 11 KDA SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AN INTERMEDIATE PRECURSOR FORM.
SUBCELLULAR LOCATION: Vacuolar.
TISSUE SPECIFICITY: EMBRYO AND LEAF.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY AI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY
                                                                                                                                                                                                                                                                                                                               Adv. Exp. Med. Biol. 306:355-359(1991),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                        X-RAY CRYSTALLOGRAPHY (2.3 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001461; AspproteaseAl.
InterPro; IPR001969; Aspprotease_site.
InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54226 MW;
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399
508 AA;
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[1]
SEQUENCE FROM N.A.
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                      Gaps
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                                                                                                                                                                                                                                                     01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last sequence update)
Aspartic proteinase orgasin l precursor (EC 3.4.23.-).
Oryza sativa (Rice).
Oryza sativa (Rice).
Spermatophyta; Magnoliophyta; Embryophyta; Tracheophyta; Enhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
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Pred. No. 0.11;
9; Mismatches 17; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16; Indels
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                                                                                        :| | | | | : : | | | | ::|:|| 378 ADPMCSACEMAVVWMQNQLAQNKTQDLILDYVNQLCNRLP 417
                                                               40
                                                             1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
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MEDLINE-96048031; PubMed-7556174;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEROPS; A01.020; ...
InterPro; IPR001461; AspproteaseA1.
InterPro; IPR001969; Aspprotease_site.
InterPro; IPR000004; SapB.
Pfam; PF000026; asp; 1.
PRINTS; PR00792; PEPSIN.
PRODOM; P0001732; SapB; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; D32165; BAA06876.1; -. EMBL; D32144; BAA06875.1; -.
                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProDom; PD001732; SapB; SMART; SM00118; SAPB; 2.
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428
252
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Q42456;
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DISULFID
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Score 75; DB 1; Length 508;

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                                                                                                                                                                                                                                                                                                                                                         Cordeiro M.C., Xue Z.-T., Pietrzak M., Pais M.S., Brodellus P.E.;
"Isolation and characterization of a cDNA from flowers of Cynara
cardunculus encoding cyprosin (an aspartic proteinase) and its use to
study the organ specific expression of cyprosin.";
Plant Mol. Biol. 24:733-744(1994).
-1- TISSUE SPECIFICITY: MOSTLY PRESENT IN THE VIOLET PARTS OF STYLES
AND COROLLAS OF MATURE FLOWRRS.
                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                       Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterids II; Asterales; Asteraceae; Cardueae; Cynara.
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N-LINKED (GLCNAC. . .) (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65F3232EBD06CB56 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hydrolase; Aspartyl protease; Zymogen; Glycoprotein.
NON_TER 1 1 2
PROPEP <1 33 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           347 CVPCARWVVWMQNQIRQNETEENIINYVDKLCERLP 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                               01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Cyprosin precursor (EC 3.4.23.-) (Fragment).
                                         473 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYPROSIN.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND SEQUENCE OF 178-186.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           495 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEROPS; A01.020;
InterPro; IPR001461; AspproteaseA1.
InterPro; IPR001969; Asprotease_site.
InterPro; IPR000004; SapB.
Pfam; PF00026; asp; 1.
ProDom; PD001732; SapB; 1.
                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00118; SAPB; 2.
PROSITE; PS00141; ASP_PROTEASE; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X69193; CAA48939.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                         MEDLINE-94250836; PubMed-8193298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
· 51564 MW;
                                                                                (Rel. 31, Created)
                                                                                                                                                                                  Cynara cardunculus (Cardoon)
                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33
473
69
256
88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P42210; 10DM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           411
473 AA;
                                                                                                                                                                                                                                                                                                                          TISSUE=Flower buds;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                              NCBI_TaxID-4265;
                                                                            01-FEB-1995 (
01-NOV-1995 (
15-JUN-2002 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MATK_TORCL Q9MVV7;
                                         CYNCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACT_SITE
ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                           CYP1_CY
P40782;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATK_TORCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A B
                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ilenserich.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                   Cucurbita pepo (Vegetable marrow) (Summer squash).

Bukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudloctyledons; core eudlocts; Rosidae;
eurosids I; Cucurbitales; Cucurbitaceae; Cucurbita.

NCBI_TaxID=3663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ASPARTIC PROTEINASE.
SPECIFIC TO PLANT ASPARTIC PROTEINASES.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eur. J. Blochem. 246:133-141(1997).
-I- FUNCTION: INVOLVED IN THE BREAKDOWN OF PROPEPTIDES OF STORAGE PROTEINS IN PROTEIN-STORAGE VACUOLES.
-I- SUBUNIT: HOTERODIMER OF A 32 kDa AND A 16 kDa SUBUNITS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDINE-97354181; PubMed-9210475; Hara-Nishimura I.; Hara-Nishimura I.; Hara-Nishimura II.; An aspartic endopeptidase is involved in the breakdown of propeptides of storage proteins in protein-storage vacuoles of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zymogen; Glycoprotein; Signal.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68; DB 1; Length 513;
No. 0.77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBCELLULAR LOCATION: Vacuolar.
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           083FB7064CE02DC2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   004057;
10.100V-1997 (Rel. 35, Created)
10.100V-1997 (Rel. 35, Last sequence update)
10.100V-2002 (Rel. 41, Last annotation update)
15.5UN-2002 (Rel. 41, Last annotation update)
Aspartic proteinase precursor (EC 3.4.23.-).
Aspartic proteinase precursor (EC 3.4.23.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
| | | | : : | | | : : | | | | 383 CNACEMAVVWMQNQLAQNKTQDLILNYINQLCDKLP 418
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001461; Aspproteaseal.
InterPro; IPR001069; Aspprotease_site.
InterPro; IPR000004; SapB.
Pfam; PP00026; asp; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART; SM00118; SAPB; 2.
PROSITE; PS00141; ASP_PROTEASE; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BY
BY
BY
BY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AB002695; BAA19607.1; -.
HSSP; P42210; 1QDM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55855 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32.2%;
28.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00792; PEPSIN.
ProDom; PD001732; SapB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322
108
1294
120
185
432
143
404
513 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEROPS; A01.020;
                                                                                                                 ASPR_CUCPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACT_SITE
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                             plants.",
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Gaps

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DISULFID DISULFID CARBOHYD SEQUENCE CARBOHYD

SIGNAL PROPEP CHAIN DOMAIN

Query Match

Matches

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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92725
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YF87_HELPJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-JAL-1, DSM 2661 / ATCC 43067;
STRAIN-4AL-1, DSM 2661 / ATCC 43067;
MEDLINE-96337999; Pubmed-e688087;
Bult C.J., White O., Olsen G.J., Zhou L., Fletschmann R.D.,
Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
Sutton G.G., Rlake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
Swriawage A.R., Dougherty B.A., Tomb J.F., Adams M.D., Reloft C.I.,
Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,
Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D.,
Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,
Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                    SIMILARITY: WITH CORRESPONDING ORF IN OTHER PLANT CHLOROPLASTS, AND REGIONS OF SIMILARITY TO MATURASE-LIKE POLYPEPTIDES ENCODED BY MITOCHONDRIAL INTRONS.
                                                                               Eukaryota: Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Coniferopsida; Coniferales; Taxaceae; Torreya.
NCBL_TaxID=89482;
                                                                                                                                                                                   Cheng Y., Nicolson R.G., Tripp K., Chaw S.;
"Phylogeny of taxaccae and Cephalotaxaccae genera inferred from chloroplast mark gene and nuclear IDNA ITS region.";
Mol. Phylogenet. Frol. 14:353-365(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 27.7%; Score 58.5; DB 1; Length 495; 1 Similarity 35.9%; Pred. No. 10; 14; Conservative 7; Mismaţches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;; mRNA processing.
495 AA; 59260 MW; 939FB037285A36F8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Archaea; Euryarchaeota; Methanococci; Methanococcales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              372 FLAKEKFCDISGHPISKLSWTSLIDDDILDRFDRICINL 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 137 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Methanocaldococcaceae; Methanocaldococcus.
                                                                 Norreya californica (California nutmeg).
                                       Probable intron maturase (Maturase K).
                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK_N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                        MEDLINE-20179521; PubMed-10712841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF01348; Intron_maturas2; 1. Pfam; PF01824; Matk_N; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AB023998; BAA86047.1; -.
Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein MJ0890.
MJ0890.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Methanococcus jannaschii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-2190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chloroplast;
                        15-JUN-2002
                                                                                                                                                             TISSUE-Leaf
                                                                                                                                                                                                                                                          INTRONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Y890_METJA
Q58300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y890_METJA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
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Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.; "Complete genome sequence of the methanogenic archaeon, Methanococcus Jannaschii.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE-99120557; PubMed-9923682;
Alm R.A., Ling L.-S.L., Molr D.T., King B.L., Brown R.D., Doig P.C.,
Smith D.R., Nonan B., Gild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Novis G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unrelated isolates of the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; epsilon subdivision; Helicobacter group;
Helicobacter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 protein; Complete proteome.
209 AA; 22907 MW; C6EC950CDD424CAF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           137 AA; 15914 MW; BOEEAC8A4245C0C8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKL 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13;
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                                                                                                                                    Science 273:1058-1073(1996).
-1- SIMILARITY: BELONGS TO THE UPF0148 FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 40, Created)
(Rel. 40, Last sequence update)
(Rel. 40, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27.5%; Score 58; DB 32.4%; Pred. No. 3; ive 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 57.5; Di
Pred. No. 5.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR005355; UPP0148.
Pfam; PF03680; UPP0148; 1.
Hypothetical protein; Complete proteome.
DOMAIN
131
135
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gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE001571; AAD07072.1; -.
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Pfam; PF03667; UPF0174; 1.
Hypothetical protein; Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical protein JHP1493.
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26.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIGR; MJ0890;
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Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.,
Tomb J.-F., White O., Kerlavage A.R., Klenk H.-P., Gill S., Dougherty B.A.,
Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S., Dougherty B.A.,
Nelson K., Quackenbush J., Zhou L., Kirkness E.F., Peterson S.,
Loftus B., Richardson D., Dodson R., Khalak H.G., Glodek A.,
McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey E.K.,
Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D., Kelley J.M.,
Cotton M.D., Weldman J.M., Fulli C., Bowman C., Watthey L., Wallin E.,
Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M.,
    Gaps
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                                                                                                                                                                                                                                                                                                                               Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; epsilon subdivision; Helicobacter group; Helicobacter.
NCBI_TaxID=210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :: |: |: | : | |::| | 50 EILCDACDHLKVNYNESSATSLIEQNMLSKLLKDSLEKMSRREIKELCNEL 100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 DVYCEVCEFL-----VKEVTKLIDNNKTEKEILDAFDKM------CSKL 39
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-1- SIMILARITY: BELONGS TO THE UPF0174 FAMILY.
-1- CAUTION: Ref.1 sequence differs from that shown due to a frameshift in position 160.
11; Conservative 10; Mismatches 16; Indels
                                      2 DVYCEVCEFL----VKEVTKLIDNNKTEKEILDAFDKMCSK 38
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Pfam; PF03667; UPF0174; 1.

Hypothetical protein; Complete proteome.

SEQUENCE 209 AA; 23069 MW; F98D3FB8F3F62323 CRC64;
                                                              50 EILCDACDHLDINYNERSATSLIEONMLSKLLKDSLEKMSGR 91
                                                                                                                                                                                                                        16-00T-2001 (Rel. 40, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 40, Last annotation update)
Hypothetical protein HP1587.
                                                                                                                                                                                        209 A.A.
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                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN-26695 / ATCC 700392;
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                                                                                                                                                                                        STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /enter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bairoch A.;
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O26106;
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Best Local S
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  Matches
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096383 centaurea c
099476 cynara card
0941a2 glycine max
018276 cenorhabdi
09frw7 nepenthes a
09sz1 helianthus
09ndhl cenorhabdi
09554 sulfolobus
076179 dictyosteli
                                                                                                                                                                                                Q94kv2 manihot esc
Q95x02 naegleria f
Q9bkm1 naegleria f
Q9xfx4 cynara card
Q8vyl3 arabidopsis
Q97j21 clostridium
Q97le5 clostridium
Q9bxv5 homo sapien
Q9hav4 homo sapien
                                                                                                                                                                                                                                                                                                                                           Q9sct5 arabidopsis
Q9mvv8 taxus bacca
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Q9frw6 nepenthes a
Q9mvv5 taxus chine
                               Q9u9p3 drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Naegleria fowleri.
Eukaryota; Heterolobosea; Schizopyrenida; Vahlkampfiidae; Naegleria.
NCBI_TaxID=5763;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [1]
SEQUENCE FROM N.A.
Nickel R., Leippe M.;
Nickel R., Leippe M.;
Nore-forming peptides of Naegleria fowleri.";
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF196308; AAL01157.1;
InterPro; IPR000004; SapB.
Probom; PD01732; SapB.
NON_TER.
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Last annotation update)
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Last annotation update)
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35.9%; Pred. No. 0.0026;
iive 13; Mismatches 12;
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                                            Q96383
Q34476
Q94782
Q18276
Q9FRW7
Q9SSZ1
Q98C114
P95954
O76179
Q95XQ2
Q95XQ2
Q95XQ2
Q95XQ2
Q95XQ2
Q95XQ2
Q95XQ2
Q99XQ4
Q90XQ4
Q
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Q40140
Q9BB23
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(TrEMBLrel. 17, I
(TrEMBLrel. 21, I
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1204
213
204
174
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505
486
5066
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10609
10609
1123
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1133
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01-JUN-2001 (
01-JUN-2001 (
01-JUN-2002 (
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62.5
62.5
62.5
62.6
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Matches
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Q9BKM2
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Q9bkm2 naegleria f
Q8uvz4 brachydanio
Q9dg82 brachydanio
Q8t213 dictyosteli
O81654 hemerocalli
                                                                                                                       (without alignments)
315.131 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                        June 2, 2003, 14:14:14; Search time 26.1538 Seconds
                                                                                                                                                                   US-09-780-438C-1
211
1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
             GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                               671580 segs, 206047115 residues
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Maximum Match 100%
Listing first 45 summaries
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Q9DG82
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Q9LUX5
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Q9FRW9
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09x125
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Gapop 10.0 , Gapext 0.5
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sp_invertebrate:*
sp_mammal:*
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sp_rodent:*
sp_virus:*
sp_vertebrate:*
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sp_bacteriap:*
sp_archeap:*
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sp_phage:*
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sp_bacteria:*
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Maximum DB seq length: 200000000
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Match I
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Gaps

Gaps

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Gloeckner G., Elchinger L., Szafranski K., Pachebat J., Dear P., Lehmann R., Baumgart C., Parra G., Aprill J.F., Gulgo R., Kumpf K., Tunggal B., Cox E., Quail M.A., Platzer M., Rosenthal A., Noegel A.A.; "Sequence and Analysis of Chromosome 2 of Dictyostellum."; Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.

EMBL, AC115596; AAL9213.1; 89DDB0520BDFA407 CRC64;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Asparagales;
Hemerocallidaceae; Hemerocallis.
NCBL_TaxID-80862;
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                                                                                                                  Altman N., Horowitz M.;
"The zebrafish prosaposin cDNA.";
Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
EMBL, AF108655, AAG32919.1, -...
ZFIN; ZDB-GENE-020108-1; psap.
                                                                                                                                                                                                                                                                                                                                                                           522 AA; 57671 MW; D3C15A305725C1CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Proteasome subunit beta type 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1998 (TrEMBLrel. 08, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Senescence-associated protein 4.
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                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
43.6%; Score 92; DB 13; I
Best Local Similarity 38.9%; Pred. No. 0.0076;
Matches 14; Conservative 12; Mismatches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hemerocallis hybrid cultivar.
                                                                                                                                                                                                                                   InterPro; IPR003119; SapA.
InterPro; IPR000004; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 3.
SMART; SM00162; SAPB; 2.
SMART; SM00118; SAPB; 4.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
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                                                                                               SEQUENCE FROM N.A.
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                                                  NCBI_TaxID=7955;
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                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
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Q8T2L3;
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081654;
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Matches
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081654
1D 081616
AC 081616
DT 01-N
DT 01-N
DT 01-N
DE Seneir
GN SA4.
CC EUKA
CC EUKA
CC SPERIOR
CC HEME
CO HE
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EMBL: AF276996; AAL54381.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Lysosomal cofactor/neurotrophic factor prosaposin.
Brachydanio rerio (Zebrafish) (Zebra danio).
Bukaryota: Metazoa: Chordata: Craniata: Vertebrata: Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostarlophysi; Cypriniformes;
NCBI_TaxID=7955;
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                                                                   Sukaryota; Heterolobosea; Schizopyrenida; Vahlkampfiidae; Naegleria.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                        SEQUENCE FROM N.A.
Nickel R., Benkert C., Jacobs T., Marti T., Marciano-Cabral F.,
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                                                                                                                                                                                                                                                                                                                                                                                                 Length 307;
                                                                                                                                                                                                                                                                                                                                                                    Score 94; DB 5; Length 307, Pred. No. 0.0027;
                                                                                                                                                                                                         "Pore-forming peptides of Naegleria fowleri.";
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; ARIS4646; ARAZ1658.1; -.
InterPro; IRR000004; SapB.
ProDom; PD001732; SapB; 2.
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                                                                                                                                                                                                                                                                                                                           SMART; SM00118; SAPB; 3.
SEQUENCE 307 AA; 33133 MW; 8503E4A755BC6DDF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                       13; Mismatches
    Naegleriapore A pore-forming peptide
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                                                                                                                                                                                                                                                                                                                                                                                               44.5%;
35.9%;
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InterPro; IPR000004; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 3.
SMART; SM00162; SAPA; 2.
SMART; SM0118; SAPB; 4.
SEQUENCE 520 AA; 57431 MW
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                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 35.9
hes 14; Conservative
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                                             Naegleria fowleri
                                                                                        NCBI_TaxID-5763;
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01-MAR-2001
01-JUN-2002
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                                                                                                                                                                                     Leippe M.;
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PROSITE; PS00019; ACTININ_1; UNKNOWN_1
       01-JUN-2001 (TrEMBLrel. 01-JUN-2002 (TrEMBLrel.
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Matches
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           DDR KEE DDR KE
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                               STRAIN-CV. STELLA D'ORO; TISSUE-SENESCING PETALS;
MEDINE-9933948; Bubmed-10412903;
MEDINE-993948; Pubmed-10412903;
Panavas T., Pikula A., Reid P.D., Rubinstein B., Walker E.L.;
"Identification of senescence-associated genes from daylily petals.";
Plant Mol. 1804. 40:237-248(1999).
-1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY Al; ALSO KNOWN AS THE
EUKARYOTIC ASPARTYL PROTEASES FAMILY.
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Pterryota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysla;
Bombycoidea; Bombycidae; Bombyx.
NCBI_TaxID=7091;
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"Molecular cloning of a cDNA encoding a silkworm protein which
contains the conserved BH regions of Bcl-2 family proteins.";
Gene 212:287-293(1998).
EMBL; AB008449; BAA23126.1;
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Pred. No. 0.25;
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                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001461; Aspproteaseal.
InterPro; IPR001969; Aspprotease_site.
InterPro; IPR001004; SapB.
Propom; PF000126; asp; 1.
ProDom; PE001732; SapB; 1.
SMART; SM00118; SAPB; 2.
PROSITE; PS00141; ASP_RROTEASE; 2.
Aspartyl protease; Bydrolase.
SEQUENCE 517.AA; 55887 MW; 374CDFC1C7BB9D56 CRC64;
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Last annotation update)
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Pred. No. (
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01-MAR-2001 (TrEMBLrel. 16, Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 37.4%;
Best Local Similarity 37.5%;
Matches 15; Conservative 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37.0%;
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                                                                                                                                                                                                                                                                                                    EMBL; AF082029; AAC34854.1;
HSSP; P42210; 1QDM.
MEROPS; A01.020; -.
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InterPro; IPR000004; SapB.
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ProDom; PD001732; SapB; 6.
SMART; SM00162; SAPA; 2.
SMART; SM00118; SAPB; 7.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bombyx mori (Silk moth)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    965 AA;
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Matches
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015997
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Gaps
                                                                                                                Nepenthes alata (Winged pitcher plant).

Eukaryota: Viridiplantae: Streptophyta: Embryophyta: Tracheophyta:
Eukaryota: Magnoliophyta: eudicotyledons: core eudicots:
Caryophyllidae: Caryophyllales: Nepenthaceae: Nepenthes.
NCBI_TaxID-4376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (Rice).
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, Liliopsida, Poales, Poaceae,
Ehrhartoldeae, Oryzeae, Oryza.
                                                                                                                                                                                                                                                                                              An C., Fukusaki E., Kobayashi A.;
An C., Fukusaki E., Kobayashi A.;
An C., Fukusaki E., Kobayashi A.;
Asparitic proteinases of carnivorus plant Nepenthes alata.";
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
-I. SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EMBL; AB04592; BAB20970.1; -.
HSSP: P42210; 10DM.
MEROPS; A01.020; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EUKARYOTIC ASPARTYL PROTEASES FAMILY.
EMBL; AP002480; BaA96578.1; --
HSSP; P42210; 10DM.
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Sasakl T., Matsumoto T., Yamamoto K.;
"Oryza sativa nipponbare(GA3) genomic DNA, chromosome 1, PAC
clone:P0469E05.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36.5%; Score 77; DB 10; Length 514; 33.3%; Pred. No. 0.43;
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Prodom; PD001732; SapB; 1.
SWART; SM00118; SAPB; 2.
PROSITE; PS0141; ASP_PROTEASE; 1.
ASPARTYJ Protease; Hydrolase.
SEQUENCE 514 AA; 55390 MW; F46C39A8090B5F55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | | | | | | : : |:||::||| DAMCTACEMAVVWMQNQLRQNRTEEQILNYVNELCNRLP 423
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
16, Last sequence update)
21, Last annotation update)
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InterPro; IPR001969; Asprotease_site.
InterPro; IPR0000004; Sapb.
Pfam; PF00026; asp; 1.
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InterPro; IPR001461; AsproteaseAl.
InterPro; IPR001969; Asprotease_site.
InterPro; IPR000004; SapB.
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Pfam; PF00026; asp; 1.
                                                      Aspartic proteinase 2.
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13; Conservative
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                                                                                                                                                                                                                                                                                                                         MEROPS; A01.020;
Krebbers E.;
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041713
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pyrus pyrifolia (Japanese pear) (Pyrus serotina).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids 1; Rosales; Rosaceae; Maloideae; Pyrus.
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Brassica napus (Rape).
Brassica napus (Rape).
Brassica napus (Rape).
Spermatophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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MEDLINE-94012630; PubMed-8407921;
D'Hondt K., Bosch D., Van Damme J., Goethals M., Vandekerckhove J.,
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Ital A., Tanaka T., Tanabe K., Tamura F.;
"Pyrus pyrifolla ripening associated mRNA, clone PPFRUII.";
Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AB021787; BAA96446.1; -
                                                                                     DB 10; Length 495;
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                                                                                  35.5%; Score 75; DB 10; Length 49
35.0%; Pred. No. 0.72;
tive 9; Mismatches 17; Indels
                      Aspartyl protease; Hydrolase.
SEQUENCE 495 AA; 54239 MW; CE06884A1A941CA2 CRC64;
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                                                                                                                                                                                                  1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Aspartic endopeptidase (Fragment).
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Last annotation update)
                                                                                                                                                                                                                                                                                                                         273 AA.
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PRODOM; PD001723; SapB; 1.
SMART; SM00118; SAPB; 2.
PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_1.
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InterPro; IPR001969; Aspprotease_site.
InterPro; IPR000004; SapB.
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PROSITE; PS00141; ASP_PROTEASE; 2.
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                                                                                                  Best Local Similaring watches 14; Conservative
                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
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                                                                                     Query Match
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Q39311
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NOV-1996 (TrEMBLrel. 21, Last annotation update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Aspartic proteinase.
Vigna unguiculata (Cowpea).
Vigna unguiculata (Cowpea).
Sukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae; Vigna.
NCBI_TaxID=3917;
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"Molecular cloning and nucleotide sequence of a cDNA encoding an aspartic proteinase from Vigna unguiculata leaves.";
Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
EMBL; u61396; AAB03843.1; -.
HSSP; P42210; 1QDM.
                                                                                                                          SEQUENCE FROM N.A.
D'Hondt K., Stack S., Gutteridge S., Vandekerckhove J., Krebbers
                                                                                                                                                                                                                     "Aspartic proteases in the Brassicaceae Arabidopsis and Brassica
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                                                                                                                                                                                                                                                  napus.";
Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS 'EUGARYCOITC ASPARTYL PROTEASES FAMILY.
EMBL, US6332; AAB03108.1; --
HSSP; P00797; 2REN.
'An aspartic proteinase present in seeds cleaves Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35.1%; Score 74; DB 10; Length 513; 33.3%; Pred. No. 0.97; ive 8; Mismatches 1B; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00792; PEPSIN.
ProDom; PD001732; SapB; 1.
SWART; SN00118; SAPB; 2.
PROSITE; PS00141; ASP_PROTEASE; 2.
ASpartyl Forcease; Hydrolase; Protease.
SEQUENCE 506 AA; 54295 MW; FF8440667AF690BD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00792; PEPSIN.
Prodom; PD001732; SapB; 1.
SWART; SW00118; SAPB; 2.
PROSITE; PS00141; ASP_PROTEASE; UNKNOWN_1.
SEQUENCE 513 AA; 55420 WW; D52P4345D25D7CF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            377 DAACSACEMAVVWIQSQLRQNWTQERILDYINDLCERLP 415
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 35.1%; Score 74; DB 10; Best Local Similarity 33.3%; Pred. No. 0.96; Matches 13; Conservative 7; Mismatches 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001461; AspproteaseA1.
InterPro; IPR001969; Aspprotease_site.
InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001461; AspproteaseAl.
InterPro; IPR001059; Aspprotease_site.
InterPro; IPR000004; SapB.
Pfam; PF00026; asp; 1.
                                   albumin precursors in vitro.";
J. Biol. Chem. 268:20884-20891(1993).
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7A51055C935CD7AE CRC64;

49650 MW;

456 AA;

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SECUENCE
                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                             Q9Y125
                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                     RESULT 15
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                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota: Viridiplantae: Streptophyta: Embryophyta; Tracheophyta;
Spermatophyta: Magnoliophyta: eudicotyledons; core eudicots;
Caryophyllidae; Caryophyllales; Nepenthaceae; Nepenthes.
NCBI_TaxID-4376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
--- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1; ALSO KNOWN AS THE EURANYOTIC ASPARTYL PROTEASES FAMILY.
EMBL; AB045891; BAB20969.1; ---
HSSP; P42210; IQDM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
An C., Fukusaki E., Kobayashi A.;
"Aspartic.proteinases of carnivorous plant Nepenthes alata.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 514;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Score 74; DB 10; Length 51; Pred. No. 0.97; 10; Mismatches 15; Indels
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EMBL; U66367; AAB06759.1; -.
InterPro; IPR001547; GH_5.
InterPro; IPR00004; SapB.
Probom; P0001722; SapB; 1.
SWART; SM00118; SAPB; 4.
PROSITE; PS00659; GLYCOSYL_HYDROL_F5; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART; SMO0118; SAPB; 2.
PROSITE; PS00141; ASP PROTEASE; 1.
ASPARTY1 protease; Hydrolase.
SEQUENCE 514 AA; 55383 MW; 98048660B42CD06A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384 DAGCSACEMAVVWVQNQLSRNQTQDQILSYVNQLCDKMP 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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Eukaryota; Mycetozoa; Dictyostellida; Dictyostellum
                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
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01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
2 DVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
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InterPro; IPR001969; Aspprotease_site.
InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                            Created)
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Best Local Similarity 33.3%;
Matches 13; Conservative 1
                                                                                                                                                                                                                                                         16,
16,
21,
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ProDom; PD001732; SapB; 1.
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                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                               01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                          (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00026; asp; 1.
                                                                                                                                                                                                                                                                                                                                             Aspartic proteinase 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEROPS; A01.020;
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                                                                                                                                                                                                                                                            01-MAR-2001
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09FRW
00FRW
AC 09FRW
DT 01-MA
DT 01-MA
DT 01-JU
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DO 01-JU
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Q94472
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RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Ra Adams M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F., Gocayne D.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., Sutton G.G., Scherer S.E., Richards S., Ashburner M. Enderson S.N., Sutton G.G., Worthan J.R., Yandell M.D., Zhang Q., Chen L.X., Ra Aradon R.C., Rogers Y.-H.C., Blazej R.G., Change M., Miklos G.L.G., Morthan J.R., Balazej R.G., Change M., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Ballew R.M., Bauch M.R., Buller H., Cadlew E., Center A., Chadra I., Ra Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Andrews D., Burtis R.C., Busam D.A., Buller H., Cadlew E., Center A., Chadra I., Ra Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Dodson K., Doup LE., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., Bodson K., Doup LE., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., Bodson K., Doup LE., Downes M., Dugan-Rocha S., Dunkov B.C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K., A Hostin D., Houston K.A., Helman T.J., Hernander S.Y., Harris M., Andrews D., Helman T.J., Hernander S.Y., Harris M., Andrews D., Helman T.J., Hernander S., Rulp D., Lai Z., Liang Y., Lin X., Liakov P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., Liakov P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., Markel B.W., McIntosh T.C., McLeodon M.P., McShrefi A., Mount S.M., Moy M., Murphy B., Murphy L., Muzzny D.M., Nelson D.L., Merkulov G., Milshina N.V., Mobarry C., Morches F., Wang X.H., Wang Z.Y., Wassarman D.A., Richort K., Wang X.H., Wang Z.Y., Wassarman D.A., Nelson M., Strong R., Spier E., Spradling A.C., Stapleton M., Strong R., Saith H., Rayer S., Hostone Sequence of Drosophila melanogaster ", Shan V., Stience 287:2185-2195(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster (Fruit fly).
Eukaryota, Metazoa, Arthropoda, Tracheata, Hexapoda, Insecta,
Pterygota, Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rubin G.M., Wan K.H., Harvey D., Lewis S.E., Brokstein P., Tsang G., Agbayani A., Arcaina T.T., Baxtex E., Blazej R.G., Butenhoff C., Champe M., Chavez C., Chew M., Doyle C.M., Farfan D.E., Frise E., Galle R., George R.A., Harris N.L., Hoskins R.A., Evans-Holm M.,
                                                                                  ö
Score 73; DB 5; Length 456; Pred. No. 1.1;
                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 12, Last sequence update) (TrEMBLrel. 20, Last annotation update)
                                                                                  14;
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                                                                                                                                                                                                                                                                                                                                                                                                                              953 AA
                                                                              8; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BERKELEY;
MEDLINE-20196006; PubMed-10731132;
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SAP-R OR BCDNA:GH08312 OR CG12070.
   34.6%;
llarity 37.1%;
Conservative
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                                   Local Similarity
nes 13; Conserv
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A Houston K.A., Hummasti S.R., Kim E., Li P., Moshrefi M., Pacleb J.M.,
A Park S., Sequeira A., Sethi H., Snir E., Svirskas R.R., Weinburg T.,
Celniker S.E.;
Celniker S.E.;
Tril length Drosophila melanogaster cDNA sequence.";
Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases.
B Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases.
B REMBL, ARI45647; AAD38652.1; ...
R FLYBase; FBGN0000416; Sap-r.
R InterPro; IPR000119; Sap-R.
R InterPro; IPR000119; Sap-R.
R InterPro; IPR001132; Sap-R.
R ProDom; PD001732; Sap-R.
R SWART; SM00118; SAP-R.
R SWART; SWA
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Search completed: June 2, 2003, 14:17:17 Job time: 28.6538 secs

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June 2, 2003, 14:14:43; Search time 12.3077 Seconds (without alignments) 95.624 Million cell updates/sec
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1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                         262574 seqs, 29422922 residues
                                                                               OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Perfect score:
Sequence:
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Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

US-08-232-513A-3 Sequence 3, Appl1 US-08-484-594A-2 Sequence 2, Appl1 US-08-483-146A-1 Sequence 1, Appl1 US-08-483-2513A-1 Sequence 1, Appl1 US-08-484-594A-1 Sequence 1, Appl1	Sequence 1, Sequence 1, Sequence 1, Sequence 1, Sequence 1, Sequence 9, Sequence 9, Sequence 7, Sequence 7, Sequence 7, Sequence 5, Sequence 6, Sequen
Sequence 3, Sequence 2, Sequence 2, Sequence 1, Sequence 1, Sequence 1,	Sequence 1, sequence 1, sequence 1, sequence 1, sequence 1, sequence 9, sequence 9, sequence 7, sequence 7, sequence 5, sequen
	Sequence Seq
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08-232-513A-3 08-464-594A.2 08-400-247-1 08-483-146A-1 08-232-513A-1 08-484-594A.1	00-231-159-1 08-611-307-1 09-148-030-1 09-231-159-8 08-611-307-8 08-611-307-8 08-483-146A-9 09-231-159-7 09-231-159-7 09-101-307-7 09-101-307-7 09-101-307-7 09-101-307-7 09-101-307-7 09-101-307-7 09-231-159-7 09-231-159-7 09-231-159-20
08-232-513A-3 08-484-594A-2 08-100-247-1 08-483-146A-1 08-232-513A-1 08-484-594A-1	09-231-159-1 09-148-159-1 09-148-030-1 09-231-159-8 08-611-307-8 08-432-513A-18 08-231-159-7 09-231-159-7 09-231-159-7 09-231-159-7 08-611-307-7 08-7
08-232-5132 08-484-5942 08-100-247- 08-483-1462 08-232-5132	09-231-1594 09-231-1594 09-148-030-09-231-307-09-231-307-09-231-307-09-231-307-09-231-307-29-39-39-39-39-39-39-39-39-39-39-39-39-39
08-237 08-484 08-100 08-487 08-237	000 - 23 - 23 - 23 - 23 - 23 - 23 - 23 -
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Length 80;

Query Match 100.0%; Score 211; DB 1; Length 8
Best Local Similarity 100.0%; Pred. No. 2.1e-20;
Matches 40; Conservative 0; Mismatches 0; Indels

Sequence 20, Appl Sequence 2, Appl Sequence 8, Appl Sequence 17, Appl Sequence 17, Appl Sequence 6, Appl Sequence 6, Appl Sequence 9, Appl Sequence 9, Appl Sequence 10, Appl Sequence 10, Appl Sequence 3, Appl Sequence 1, Appl S		FACTOR
US-08-611-307-20 US-09-148-030-2 US-09-148-030-10 US-08-483-146A-8 US-08-232-513A-17 US-09-231-159-6 US-09-231-159-9 US-09-231-159-9 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-231-159-10 US-09-134-030-3 US-09-134-030-3 US-09-134-030-3 US-09-134-030-3	ALIGNMENTS	AS A NEUROTROPHIC LSON AND BEAR IVE SIXTEENTH F1 OS .0, Version #1.25 ,247 EN.002A
339.3 335.3 335.5 355.5 335.5 35.5 335.5 335.5 335.5 335.5 335.5 335.5 335.5 335.5 335.5 335.5 3		T. 1 -100-247-3 uence 3, Application US/081002 went No. 557170. APPLICANT: O'BRIEN JOHN S. APPLICANT: O'BRIEN JOHN S. APPLICANT: C'BRIENDOW, YASUO TITLE OF INVENTION: PROSAPOSI NUMBER OF SEQUENCES: 5 CORRESPONDENCE S. 5 CORRESPONDENCE ADDRESS: ADDRESSEE: KNOBBE, MARTENS, STREET: 620 NEWPORT CENTER CITY: NEWPORT BEACH STRATE: CA COUNTRY: USA CONDUTER: LB PC compatible COMPUTER: PERPOSAMS SOFTWARE: PACHION OF STATE CIASTELLING SYSTEM: PC-DOS/MS SOFTWARE: PACHION: NUMBER: US/08/1 FILING DATE: 1993073 CLASSIFICATION NUMBER: US/08/1 FILING DATE: 1993073 CLASSIFICATION NUMBER: US/08/1 FILING DATE: 1993073 TELECOMMUNICATION INFORMATION: TELENTRY 619-235-055 REGISTRATION NUMBER: OS TELENTRY: 619-235-016 TELENTRY: 619-235-016 TELENTRY: SOURCE: NO FRAGNENT TYPE: INTERNAL MOLECULE TYPE: DEOCEIN HYPOPHERICIALS CLASSIFICATION TYPE: AMINO ACIG TYPE: AMINO
2228 33323 3322 3322 3322 3322 3322 332		RESULT 1 US-08-100-247-3 Sequence 3, Application US/08100247 Sequence 3, S571787 GENERAL INFORMATION. GENERAL INFORMATION. APPLICANT: VERIEN JOHN S. APPLICANT: KISHIMOYO, YASON TITLE OF INVENTION: PROSAPOSIN NUMBER OF SEQUENCES: 5 CORRESPONDENCE S. 5 CORRESPONDENCE S. 5 CORRESPONDENCE S. 5 CONTRY: USA STREET: 620 NEWPORT CENTER DR CITY: NEWPORT ERFACH STATE: CA COUNTRY: USA CONTRY: USA STREET: READABLE FORM: MEDIUM TYPE: Floppy disk CONTRY: USA CONTRY: USA CONTRY: USA STREET: NO NERS: 19930730 CLASSIFCATION: SYSTEM: OSA REGISTATION NUMBER: US/08/100 FILING DATE: 19930730 CLASSIFCATION: OSA REGISTATION NUMBER: US/08/100 FILING DATE: 19930730 CLASSIFCATION: OSA REGISTATION NUMBER: US/08/100 FILING DATE: 19930730 CLASSITATION NUMBER: US/08/100 FRAGNET TYPE: DATE US/08/100 FRAGNET TYPE: INTERNET CLASSITATION NUMBER: US/08/100 FRAGNET TYPE: US/08/
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4370 La Jolla Village Drive, Suite 700
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TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM Compatible OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: peptide
STREET: 43/C.CIIY: San Diego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EQUENCTH: BU and The amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 40; Conserv
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                                                                                                                          Sequence 3. Application US/08483146A

Patent No. 5696080

GRNERAL INFORMATION:
APPLICANT: O'Exien, John S.
APPLICANT: O'Exien, John S.
APPLICANT: O'Exien, John S.
TITLE OF INVENTION: COMPRISING PROSAPOSIN AND NEUROTROPHIC PEPTIDES DERIVED
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCES 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
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Patent No. 5700909
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Prosaposin and Cytokine-Derived Peptides
TITLE OF INVENTION: as Therapeutic Agents
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell & Flores LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 80;
                                    1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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100.0%; Score 211; DB 1;
Best Local Similarity 100.0%; Pred. No. 2.1e-20;
Matches 40; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                    STATE: CA
COUNTRY: USA
2 D: 2060
COMPUTER READBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: Diskette
COMPUTER: Diskette
COMPUTER: Diskette
COMPUTER: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,146A
FILING DATE: 07-JUN-1995
CLASSIFICATION DATA:
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: 187a618eb, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYEL
TELECOMMOILCATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFAX: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein FRAGMENT TYPE: internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                  US-08-483-146A-3
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Patent No. 5714459

GENERAL INFORMATION:
APPLICANT: Kishimoto, Yasuo
TILLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TILLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TILLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSED: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: US/08/232,513A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
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ilarity 100.0%; Pred. No. 2.1e-20;
Conservative 0; Mismatches 0;
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SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: U5/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
                                                                                                                                                       APPLICATION NUMBER: US/08/232,513A
FILING DATE: 21-APR-1994
CLASSIFICATION: 514
PRIOR APPLICATION: 514
APPLICATION DATA: US 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1643
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Peptide
LOCATION: 1..80
OTHER INFORMATION: /label= Saposin_C
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Length 523;

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100.0%; Score 211; DB 1;
100.0%; Pred. No. 1.8e-19;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                           Sequence 2, Application US/08483146A Patent No. 5696080
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFRENCE/DOCKET NUMBER: WYEI
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 523 amino acids TYPE; amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                        Best Local Similarity 100.0
Matches 40; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
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Best Local Similarity
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US-08-483-146A-2
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                       Query Match
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APPLICANT: O'BRIEN, JOHN S.
APPLICANT: O'BRIEN, JOHN S.
APPLICANT: KISHIMOTO, YASUO
TITLE OF INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC COMPATIBLE
CORFWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/100,247
FILING DATE: 19930730
CLASSIFICATION: 514
ATORNEY/AGENT INFOMMATION:
NAME: ISFRAHION:
NAME: ISFRAHION:
NAME: GETSERATION:
NAME: GETSERATION NUMBER: 29,6555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.0%; Score 211; DB 1; Best Local Similarity 100.0%; Pred. No. 2.1e-20; Matches 40; Conservative 0; Mismatches 0;
                                                                                MYELOS.002DV2
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                                    NAME: ISraelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYEL
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-6550
TELEPAX: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/08100247
Patent No. 5571787
FILING DATE: 30-JUL-1993
                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acid
                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
                                                                                                                                                                                                                                                                                                     ) MOLECULE TYPE: protein
; FRAGMENT TYPE: internal
US-08-484-594A-3
                                                                                                                                                                                                                                           TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: NEWPORT BEACH
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IMMEDIATE SOURCE:
CLONE: PROSAPOSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
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GENERAL INCORMATION:
APPLICANT: VS STIED, John S.
APPLICANT: KISHIMOCO, YSANO
APPLICANT: KISHIMOCO, YSANO
TITLE OF INVENTION: PHARMACEDTICAL COMPOSITIONS
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
CITY: Newport Beach
STATE: CA
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Indels
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                                                 310 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
                               1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 211; DB 1;
1larity 100.0%; Pred. No. 1.8e-19;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                          MYELOS.002DV1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
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Length 523;
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APPLICANT: O'BRIEN, JOHN S.
APPLICANT: TISHEMOTO, YASUO
TITLE OF INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
CITY: NEWPORT BEACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTE: FELDABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/100,247
FILING DATE: 19930730
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: ISTAGLSCH, NG A
REGISTRATION NUMBER: 29,655
RESPERNCE/DOCKET NUMBER: 0B.155
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 211; DB 1;
Pred. No. 1.8e-19;
; Mismatches 0;
                                                                                                                                                                                                                                                                   MYELOS.002DV2
      APPLICATION NUMBER: US/08/484,594A
                        PILING DATE: 07-JUN 1995
CLASSIFICATION: 514
PRIOR APPLICATION 1514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: ISRAGISEN, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYELOS.(TELEPHONE: 619-235-855)
TELEPHONE: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/08100247
Patent No. 5571787
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Best Local Similarity 100.0%;
Matches 40; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 2:
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                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear MOLECULE TYPE: peptide HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-484-594A-2
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Sequence 2, Application US/08484594A

Batent No. 5714459

GENERAL INFORMATION:
APPLICANT: KISHIMOTO, Yasuo
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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TITLE OF INVENTION: Prosaposin and Cytokine-Derived Peptides TITLE OF INVENTION: as Therapeutic Agents
CORRESPONDENCE: 20
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 523;
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                                                                                                                                                                                                                                                                                                                                                                                        CURRENTING SYSTEM: UC-LOSS/MS-LOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING APPLICATION 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Caribyn A.
REGISTRATON NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1643
TELEPHONE: (619) 535-9901
TELEPHONE: (519) 535-9901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                               ADDRESSEE: Campbell & Flores LLP
STREET: 4370 La Jolla Village Drive, Suite 700
CITY: San Disco
STATE: Callfornia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ch 100.0%; Score 211; DB 1; Similarity 100.0%; Pred. No. 1.8e-19; 40; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; LOCATION: 1..523
; OTHER INFORMATION: /label- Hum_prosaposin
US-08-232-513A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM Compatible OPERATING SYSTEM: DOS SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 40; Conserva
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                                                                                                                                                                                                                               COUNTRY:
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Gaps

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APPLICANT: O'Barian, John S.

APPLICANT: Kishimoto, Yasuo,
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: THEREFROM
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
CITY: Newport Beach
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                                                                                                                Length 22;
                                                                                                                                                      0; Indels
                                                                                                                Score 111; DB 1;
Pred. No. 3.7e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
OPERATING SYSTEM: DOS
OPERATING SYSTEM: DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,146A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
                                                                                                              Query Match 52.6%; Score 111; DB Best Local Similarity 100.0%; Pred. No. 3.7 Matches 22; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY, AGENT INFORMATION:
MAME: ISraelsen, Ned A
REGISTAATION NUMBER: 29 ASENCESTRATION NUMBER: 29 TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFRAX: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CEFLVKEVTKLIDNNKTEKEIL 22
                                                                                                                                                                                        8 CEFLVKEVTKLIDNNKTEKEIL 29
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                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08483146A Patent No. 5696080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
                                 IMMEDIATE SOURCE:
CLONE: 22-MER FRAGMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                     internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: peptide FRAGMENT TYPE: internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 22; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
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ANTI-SENSE:
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US-08-483-146A-1
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                                                         ; CLONE: 2
US-08-100-247-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE:
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RESULT 11

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Gaps
Sequence 1, Application US/08232513A

Patent No. 5700909

GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
TITLE OF INVENTION: as Therapeutic Agents
TITLE OF INVENTION: as Therapeutic Agents

CORRESPONDENCE ADDRESS:
STREET: 4370 La Jolla Village Drive, Suite 700
CITY: San Diego
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:

APPLICANT: O'Brien, John S.

APPLICANT: Nishimoto, Yasop PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
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                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52.6%; Score 111; DB 1; I 100.0%; Pred. No. 3.7e-08; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING DATE: 21-APR-1994
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTATION NUMBER: 31,815
REFERNCE/DOCKET NUMBER: P-UD 1643
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Peptide
LOCATION: 1..22
OTHER INFORMATION: /label= SapC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 CEFLVKEVTKLIDNNKTEKEIL 29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/08484594A Patent No. 5714459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100.0
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM
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Gaps

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Sequence 1. Application US/08611307

Fatent No. 6271196

GENERAL INFORMATION:

APPLICANT: O'Brien, John S.

TITLE OF INVENTION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides

NUMBER OF SEQUENCES: 21

CORRESPONDENCE ADDRESS:

ADDRESSEE: Campbell and Flores

STREET: 4370 La Jolla Village Drive, Suite 700

CITY: San Diego

STATE: Callfornia

COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-09-148-030-1
Sequence 1, Application US/09148030C
Patent No. 6458357
GENERAL INFORMATION:
APPLICANT: White, Michael T.
APPLICANT: Wright, David E.
APPLICANT: Wright, David E.
TITLE OF INVENTION: RETRO-INVERSO NEUROTROPHIC AND ANALGESIC
                                                                                                                                                   Query Match 52.6%; Score 111; DB 4; Length 22; Best Local Similarity 100.0%; Pred. No. 3.7e-08; Matches 22; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPANIOS SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/611,307
FILING DATE: 05-MAR-1996
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: CAMPALICATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1928
TELEPHONE: (619) 535-8949
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 52.6%; Score 111; DB 4; Best Local Similarity 100.0%; Pred. No. 3.7e-08; Matches 22; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                    8 CEFLVKEVTKLIDNNKTEKEIL 29
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                    SEQUENCE CHARACTERISTICS:
                                                22 amino acids
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  INFORMATION FOR SEQ ID NO:
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TOPOLOGY: linear
                                                                  amino acid
                                                                TYPE: ami
TOPOLOGY:
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                                                                                                            US-09-231-159-1
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Sequence 1, Application US/09231159

Patent No. 6268347

APPLICANT: O'Brien, John S.

TITLE OF INVENTION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides NUMBER OF SEQUENCES: 21

CORRESPONDENCE ADDRESS:

ADDRESSEE: Campbell and Flores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 22;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ...ved Pej ...vesSEE: Campbell and Flores STREET: 4370 La Jolla Village Drive, Suite 700 CITY: San Diego STATE: California COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/231,159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 111; DB 1; 1
Pred. No. 3.7e-08;
             COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEG for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATORNEY/AGENT INFORMATION:
NAME: IS.Realsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/ODCKET NUMBER: 29,655
TELEPHONE: 619-235-8550
TELEPHONE: 619-235-8350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52.6%; Score_100.0%; Pred. No. 3./e-1100.0%; Pred. No. 3./e-1110.0%; Mismatches
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APPLICATION NUMBER: US/09/231,159
FILING DATE: 05-MAR-1996
ATORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1928
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9901
TELEFAX: (619) 535-9949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 CEFLVKEVTKLIDNNKTEKEIL 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CEFLVKEVTKLIDNNKTEKEIL 22
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
TYPE: amino acid
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Best Local Similarity 100.0
                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITE: MINIO ACIU
STRANDENESS: SINGle
TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-484-594A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
MEDIUM TYPE:
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Gaps

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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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OM protein - protein search, using sw model

June 2, 2003, 14:14:18; Search time 15.8974 Seconds Run on:

(without alignments) 254.692 Million cell updates/sec

US-09-780-438C-1 211 1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40 Title: Perfect score:

Sequence:

Scoring table:

Searched:

BLOSUM62 Gapop 10.0 , Gapext 0.5

Total number of hits satisfying chosen parameters:

383519 seqs, 101223694 residues

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Ggn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

/ggn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

/ggn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*

/ggn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

/ggn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*

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/ggn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*

/ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

/ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

/ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

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/ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

/ggn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:* /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:* /cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:* Published_Applications_AA:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	Sequence 1, Appli			_`	Sequence 2, Appli		Sequence 61, Appl		4,	Ø	Sequence 1, Appli	<u>_</u>	6	'n		4	Sequence 2, Appli		ď,
	ID	US-09-780-438A-1	US-09-767-007A-3	US-09-753-126-3	US-10-043-487-340	US-09-767-007A-2	US-09-870-759-60	US-09-870-759-61	US-10-060-036-73	US-09-753-126-4	US-09-780-438A-2	US-09-767-007A-1	US-09-957-143-1	US-09-767-007A-9	US-09-767-007A-5	US-09-957-143-2	US-10-293-819-2	US-09-802-617-2	US-09-767-007A-8	US-10-293-819-1
	DB	9	10	10	σ	ព	σ	σ	σ	10	σ	10	10	10	2	10	σ	10	10	6
	Query Match Length DB	40	80	80	209	523	524	527	527	592	38	22	22	22	18	18	15	15	22	12
940	Query Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.3	52.6	52.6	45.5	39.3	39.3	35.5	35.5	35.5	28.0
	Score	211	211	211	211	211	211	211	211	211	201	111	111	96	83	83	75	75	75	29
	Result No.	П	7	m	4	'n	φ	7	6 0	თ	10	11	12	13	14	15	16	17	18	19

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Sequence 1, Appli Sequence 3, Appli Sequence 8, Appli Sequence 15, Appl Sequence 2, Appli Sequence 2, Appli Sequence 37, Appli Sequence 37, Appli Sequence 1417, App Sequence 1417, App Sequence 172, Appli Sequence 172, Appli Sequence 246, Appli Sequence 246, Appli Sequence 173, Appli Sequence 173, Appli Sequence 173, Appli Sequence 13335, Appli Sequence 13335, Appli Sequence 1335, Appli Sequence 1335, Appli Sequence 1335, Appli Sequence 1335, Appli Sequence 12552, Appli	• ₹
US-09-802-617-1 US-09-957-143-3 US-09-864-761-36091 US-09-864-761-36091 US-09-961-403-15 US-09-961-403-15 US-09-912-175-3 US-09-911-846-3 US-09-986-480-367 US-09-986-480-367 US-09-986-480-367 US-09-984-332-2 US-10-114-893-214 US-09-986-480-368 US-09-986-480-368 US-09-986-480-368 US-09-9815-42-13335 US-09-815-242-13355 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552 US-09-815-242-12552	US-09-820-408-4
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444 444 244 244 244 244 244 244 2	47.5
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ALIGNMENTS

RESULT 1 US-09-780-438A-1

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APPLICATE: Unclination Childrens Hospital Research Foundation
TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and PO
TITLE OF INVENTION: For Application to Transmembrane Drug Delivery Systems
FILE REFERENCE: 10872/04/4785/200780,438A
CURRENT APPLICATION NUMBER: US 60/181,754
PRIOR APPLICATION NUMBER: US 60/181,754
PRIOR FILING DATE: 2000-02-11
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin version 3.0
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US-09-767-007A-3
US-09-767-007A-3
Sequence 3, Application US/09767007A
Sequence 3, Comparing 1
Sequence 
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Pred. No. 7.8e-21;
0; Mismatches 0;
Sequence 1, Application US/09780438A Publication No. US20030095999A1 GENERAL INFORMATION:
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US-09-780-438A-1
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Best Local Similarity
Matches 40; Conserv
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LENGTH: 40
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us-09-780-438c-1.rapb

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TITLE OF INVENTION: Protein-protein interactions between Shigella Flexneri polypep TITLE OF INVENTION: mammalian polypeptides FILE OF INVENTION: mammalian polypeptides CURRENT APPLICATION NUMBER: US/10/043,487
CURRENT APPLICATION NUMBER: US/06/261,130
PRIOR FILING DATE: 2001-01-12
NUMBER OF SEQ ID NOS: 561
SOFTWARE: Patentin version 3.1
SEQ ID NO 340
LENGTH: 209
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APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
FILE REFERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT PILING DATE: 2002-01-14
PRIOR PILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: PATENTIN VERSION 3.1
SOFTWARE: PATENTIN VERSION 3.1
LENGTH: 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: ASSOC KISHING
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILLE REPERENCE: WIELOS. 2001.01.
CURRENT APPLICATION NUMBER: US/09/767,007A
CURRENT FILING DATE: 2001-01-22
PRIOR APPLICATION NUMBER: 08/958,970
PRIOR PLILING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%; Score 211; DB 9; Length 209; Best Local Similarity 100.0%; Pred. No. 5e-20; Matches 40; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               310 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09767007A Patent No. US20020077275A1
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                                                                                                                                                                                                                                                                                                                    ; TYPE: PRT
; ORGANISM: Shigella Flexneri
US-10-043-487-340
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US-09-767-007A-2
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Patent No. US20020127219A1
GENERAL INFORMATION:
APPLICANT: OKKELS, JENS SIGURD
APPLICANT: JENSEN, ANNE DAM
APPLICANTON: ACTIVATORS
TITLE OF INVENTION: ACTIVATORS
FILE REFERENCE: 31-00060015
FILE REFERENCE: 31-00060015
FILE REPERENCE: 31-00060015
FILE REPLIANG DATE: 2000-06-11
PRIOR FILING DATE: 2000-01-06
PRIOR FILING DATE: 2000-06-02
PRIOR FILING DATE: 2000-06-02
PRIOR FILING DATE: 2000-06-12
PRIOR FILING DATE: 2000-06-13
PRIOR FILING DATE: 2000-07-11
SEQUID NO 3
LENGTH HOW 3
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                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 211; DB 10; Best Local Similarity 100.0%; Pred. No. 1.7e-20; Matches 40; Conservative 0; Mismatches 0;
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        PRIOR APPLICATION NUMBER: 08/958,970
PRIOR FILIAG DATE: 1997-10-28
NUMBER OF SEG ID NOS: 11
SOFTWARE: FASTSEO for Windows Version 4.0
                                                                                                                                                                                                                                                        CTHER INFORMATION: Artificial peptide US-09-767-007A-3
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APPLICANT: HYBRIGENICS
APPLICANT: PIETTE, LEGRAIN
                                                                                                                                                                                                  ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pierre, LEGRAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
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US-09-753-126-3
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                                                                                                                     SEQ ID NO 3
LENGTH: 80
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Sequence 2, Application US/09780438A
Publication No. US2003009599A1
Publication No. US2003009599A1
REDEBRAL INFORMATION:
APPLICANT: Cincinnati Childrens Hospital Research Foundation
APPLICANT: Cincinnati Childrens Hospital Research Foundation
TITLE OF INVENTION: Eusogenic Properties of Saposin C and Related Proteins and Portice of INVENTION: Fuse of Papilication to Transmembrane Drug Delivery Systems
FILE REFERENCE: 10872/0474352
CURRENT APPLICATION NUMBER: US 60/181,754
PRIOR APPLICATION NUMBER: US 60/181,754
PRIOR FILING DATE: 2000-02-11
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin version 3.0
                                                                                                                APPLICANT: JENGRALD.

APPLICANT: JENSEN, ANNE DAM
APPLICANT: JENSEN, ANNE DAM
APPLICANT: JENSEN, ANNE DAM
APPLICANT: HEALIER, TORBEN
TITLE OF INVENTION: ACTIVATORS
TITLE OF TOTAL DATE: 2001-06-11
PRIOR APPLICATION NUMBER: 60/11/124
PRIOR FILING DATE: 2000-06-12
PRIOR FILING DATE: 2000-06-12
PRIOR PELING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: 60/211/124
PRIOR PELING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: 60/211/124
PRIOR PELING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: 60/211/14
PRIOR FILING DATE: 2000-06-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) OTHER INFORMATION: Description of Artificial Sequence: Chimeric; OTHER INFORMATION: SapC-linker-GCB polypeptide US-09-753-126-4
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100.0%; Pred. No. 1.6e-19;
tive 0; Mismatches 0;
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Best Local Similarity 100.0%; Pred. No. 1.5e-19;
Matches 38; Conservative 0; Mismatches 0;
                                                 Sequence 4, Application US/09753126 Patent No. US20020127219A1 GENERAL INFORMATION:
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Best Local Similarity 100.(
Matches 40; Conservative
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                          JS-09-753-126-4
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TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
TITLE REPERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: 2002-01-14
PRIOR PELCATION NUMBER: US 60/208,128
PRIOR PILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
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APPLICANT: Kalos, Michael D.
APPLICANT: Lodge, Michael J.
APPLICANT: Lodge, Michael J.
APPLICANT: Hepler, William T.
APPLICANT: Hepler, William T.
APPLICANT: Jang, Yuqiu
TILLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
TITLE OF INVENTION: AND DIAGNOSIS OF PANCREATIC CANCER
FILE REFERENCE: 210121.566
CURRENT APPLICATION NUMBER: US/10/060,036
CURRENT FILLING DATE: 2002-01-30
NUMBER OF SEQ ID NOS: 4560
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Pred. No. 1.4e-19;
Mismatches 0; Indels
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                                                                                                                                                  1 SDVYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP
                                              100.0%; Score 211; DB 9;
ilarity 100.0%; Pred. No. 1.4e-19;
Conservative 0; Mismatches 0;
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100.0%; Pred. No. 1.4e-19;
tive 0; Mismatches 0;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 73, Application US/10060036; Publication No. US20030073144A1; GENERAL INFORMATION:
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; Sequence 61, Application US/09870759

; Patent No. US20020177551A1

; GENERAL INFORMATION:
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ORGANISM: Homo saplens
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ORGANISM: Homo sapiens
                                 Query Match
Best Local Similarity
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nes 40; Conserva
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US-09-870-759-60
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Gaps

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Length 592;

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| Sequence 5, Application US/09767007A
| Sequence 5, Application US/09767007A
| Patent No. US200200077275A1
| Settent No. US200200077275A1
| GAPLICANT OF NO. O'Brien | Sequence 5, O'Brien | Septicant John S. O'Brien | Septicant John S. O'Brien | Septicant O'Brien Septicant Septicant Septicant Septicant Septicant O'Brien Septicant Septicant O'Brien Septicant Septicant Septicant NUMBER: US/09/767,007A | CURRENT FILING DATE: 2001-01-22 | PRIOR APPLICATION NUMBER: US/09/767,007A | PRIOR FILING DATE: 1997-10-28 | PRIOR FILING DATE: 1997-10-28 | SOFTWARR: PastSEQ for Windows Version 4.0 | SOFT
                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: Yasuo Kishimo Kishimo
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Pred. No. 4.1e-06;
3; Mismatches 1
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GENERAL INFORMATION:
APPLICANT: John S. O'Brien
APPLICANT: David E. Wright
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Best Local Similarity 81.8%;
Matches 18; Conservative
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Best Local Similarity 100.'
Matches 17; Conservative
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                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/09767007A
Patent No. US20020077275A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Yeasu Kishimoto
TITLE OF INVENTION: PHARMACUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PARAMACUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PARAMACUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PARAMACUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SADOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILE REFERENCE: NYELOS, 2DC1C1
CURRENT FILING DATE: 2001-01-22
PRIOR FILING DATE: 1997-10-28
NUMBER OF SEO ID NOS: 11
SOFTWARE: FRSISEO for Windows Version 4.0
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APPLICANT: JOHN S. O'BITEN
TITLE OF INVENTION: RETRO-INVERSO PROSADOSIN-DERIVED
TITLE OF INVENTION: REPRO-INVERSO PROSADOSIN-DERIVED
TITLE OF INVENTION: PEPTIDES AND USE THEREOF
FILE REFERENCE: MYELOS.018C1
CURRENT APPLICATION NUMBER: US/09/957,143
CURRENT APPLICATION NUMBER: PCT/US00/08550
PRIOR FILING DATE: 2000-03-29
PRIOR FILING DATE: 2000-03-29
PRIOR FILING DATE: 1999-03-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FRASED for Windows Version 4.0
3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                   1 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 38
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Artificial peptide US-09-767-007A-1
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Patent No. US20020128193A1
GENERAL INFORMATION:
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ORGANISM: Artificial Sequence
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Best Local Similarity
                                                                                                                                                                                                                       RESULT 11
US-09-767-007A-1
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LENGTH: 22
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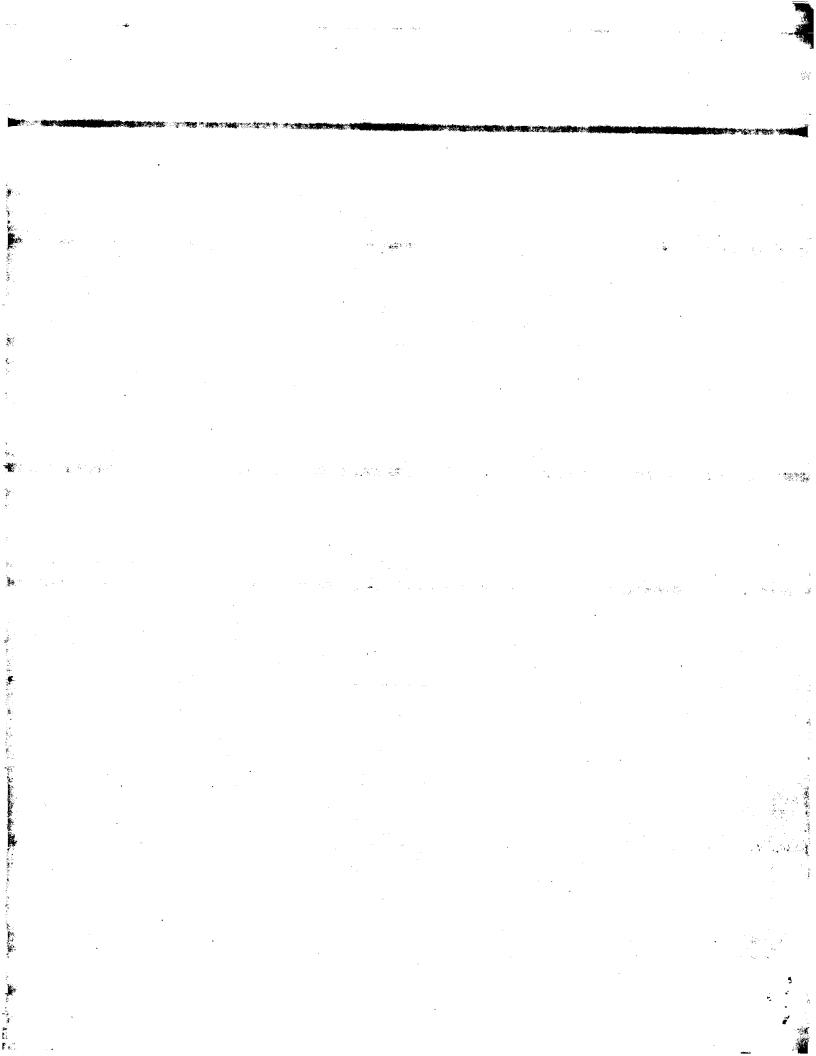
Gaps

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Search completed: June 2, 2003, 14:17:53 Job time: 16.8974 secs



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June 2, 2003, 14:14:14; Search time 29.7179 Seconds
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                             OM protein - protein search, using sw model
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(without alignments)
170.386 Million cell updates/sec US-09-780-438C-6 131 1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38 Perfect score: Sequence:

BLOSUM62. Gapop 10.0 , Gapext 0.5 Scoring table:

908470 seqs, 133250620 residues Searched:

908470 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

A_Geneseq_101002:*

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/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1989.DAT:*/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:* /SIDS2/gcgdata/geneseg/genesegp-embl/AA1992.DAT:*/SIDS2/gcgdata/geneseg/genesegp-embl/AA1993.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1994.DAT:* /gcgdata/geneseg/genesegp-embl/AA1995.DAT:*/gcgdata/geneseg/genesegp-embl/AA1996.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1997.DAT:*/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1998.DAT:* /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995.

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Saposin-C. Homo s	Human saposin C.	Human Saponin C, S	Amino acid sequenc	Prosaposin, Homo	Human prosaposin N	Human prosaposin.	Amino acid sequenc	Human qlucocerebro	Human saposin C.
ID	AAR70784) AAW85653	: AAU05697	: AAB31916	5 AAR70783) AAW85652	. AAY58716	: AAB31915	AAU05698	AAB67289
Query Match Length DB	80 16	80 20	80 22	523 22	524 16	524 20	524 21	527 22	592 22	25 22
Ouery Match I	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	49.6
Score	101	101	101	101	101	101	101	101	101	65
Result No.	П	7	Э	4	Ŋ	9	7	æ	on	10

Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from

Human saposin C 22	Saposin-C neurotro	Prosaposin-derived	Prosaposin recepto	Prosaposin recepto	Peptide #5. Homo	Mutant human prosa	a	Bovine prosaposin-	Prosaposin recepto	Prosaposin recepto	o	Saposin-C derived	Saposin C 12 to 29	Prosaposin recepto	Prosaposin recepto	Ø	U	Human saposin C fr		iag	Human phospholipas	Mouse ischaemic co	Novel human diagno	Human protein SEQ	Human protein SEQ	Human lipid metabo	Mutant human prosa		Drosophila melanog	. Bacillus subtilis	Drosophila melanog	Human ORFX protein	Human polypeptide	Human polypeptide
AAY82281	AAR70773	AAW30013	AAW66127	AAW85656	AAB67305	AAW30028	AAW66134	AAW30018	AAW66133	AAW85661	AAB67293	AAR70785	AAW30031	AAW66146	AAW85655	AAY82282	AAW83412	AAW99848	AAY83914	ABG22055	ABB11113	ABB57102	ABG12052	AAM80177	AAM79193	ABB08204	AAW30030	AAW66136	ABB65307	AAW98149	ABB60641	ABP06911	AAM39351	AAM41137
21		18	19	20	22	18	13	18	19	50	22	16	18	19	20	21	13	20	21	22	22	23	22	22	55	23	18	19	22	20	22	53	22	22
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46.6	46.6	Ġ		Ġ	46.6	42.7	ά.	41.2	41.2	÷.	41.2	38.2	38.2	38.2	38.2	38.2	34.4	34.4	34.4	34.4	32.8	32.8	32.8	32.8	32.8	32.8	32.1	32.1	32.1	32.1	;	30.5	。	
61	61	61	61	61	61	26	26	54	54	24	24	20	20	20	20	20	45	45	45	45	43	43	43	43	43	43	42	42	42	42	41	40	0.4	40
11	. 12	13	14	15	16	17		19	50	21	22	23	24	25	26	27	28	29	30		32	33	34	35	36	37	38	33	40	41	42	43	4	45

ALIGNMENTS

Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis; adrenal leukodystrophy. AAR70784 standard; Protein; 80 AA 93US-0100247. 94WO-US08453 (first entry) Obrien JS; WPI; 1995-082029/11. (OBRI/) OBRIEN J S. Kishimoto Y, Homo sapiens 30-JUL-1993; 21-APR-1994; 28-JUL-1994; 30-AUG-1995 WO9503821-A. 09-FEB-1995. Saposin-C. AAR70784

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Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                               Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Prosaposin is a 70kDa glycoprotein which is proteclytically processed to generate saposins A, B, C and D, all of which are similar to each other and have a similar placement of six cysteines, a glycosylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Parkinson's disease; amyotrophic lateral sclerosis;
Huntington's disease; ischemic heart disease; Guillain-Barre disease;
alopecia; AIDS dementia; cerebral malaria; HTLV; neuropathy;
inflammatory neurodegenerative disease; toxin induced liver disease.
                                                                                                                                                                                                                Gaps
                                                      A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic cytokines, and neuropoietic peptide with hematopoietic and neuropoietic cytokines, and neurotrophic peptides neurotrophic factor, interleukins-6, -2, -3 and -gamma, erythropoietin and leukocyte inhibitory factor, and neurotrophic factor, and neurotrophic factor, and neurotrophic factor, and neurotrophic factor, and and neurotrophic factor, and and oncestatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
                                             The peptide given in AAR70773, corresponding to amino acids 8-29 of
                                                                                                                                                                                                                                                                                                                                                                                                               Prosaposin; saposin; prosaptides; prosaposin receptor agonists; Akt; Bel-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease; Irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; progressive multifocal leukoencephalitis; Alzheimer's disease;
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                                                                                                                                                                                      Length 80;
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                                                                                                                                                                                    Query Match 77.1%; Score 101; DB 16; I Best Local Similarity 55.9%; Pred. No. 7.3e-10; Matches 19; Conservative 0; Mismatches 15;
cytokine(s), for treating nervous system diseases
                                                                                                                                                                                                                                    5 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 38
                      Disclosure; Page 32; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jse of prosaposin receptor agonist
                                                                                                                                                                                                                                                                                                                     AAW85653 standard; Peptide; 80 AA
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                                                                                                                                                                                                                                                                                                                                                                  19-JUL-1999 (first entry)
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                                                                                                                                                                 80 AA;
                                                                                                                                                                                                                                                                                                                                                                                           Human saposin C.
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                                                                                                                                                                  Sequence
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                                                                                                                                                                                                                                                                                              RESULT 2
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prosaposin derived proline residues. Prosaposin, saposin C and prosaposin derived peptides (prosaptides), have therapeutic applications in promoting recovery after toxic, traumatic, myocardial ishchaemic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit proinflammatory cytokine induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bcl-2 family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members, which inhibit caspases, thereby inhibiting apoptosis. An additional mechanism whereby PRAs inhibit apoptosis is by blocking activation of JNK, a proapoptofic signaling component. Within several minutes after binding to the receptor, PRAs block JNK activation induced by tumor necrosis factor-alpha (TNF alpha). The activation of JNK by TNF alpha is another well known mechanism for activation of JNK by TNF alpha is another well known mechanism for TNF alpha-induced, as well as other proinflammatory cytokine, for example TNF alpha or interferon-gamma. It can be used for inhibiting apoptosis which is caspase-mediated with a disorder such as e.g. rheumatoid activation, congestive heart failure, multiple sclerosis, acute disseminated inflammatory leukoencephalitis, progressive multifocal leukoencephalitis, Alzheimer's disease, Parkinson's disease, ischemic heart disease, Guillain-Barre disease, Parkinson's disease, ischemic carboral cord injury, alopecia, AlDS dementia, cerebral malaria, natured disease, Saposin C acts as a prosaposin receptor agonist.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.1%; Score 101; DB 20; 55.9%; Pred. No. 7.3e-10; Live 0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 38
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAU05697 standard; Protein; 80 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-JUN-2000; 2000DK-0000865.
02-JUN-2000; 2000DK-0000866.
30-JUN-2000; 2000DK-0001027.
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Best Local Similarity 55.9
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jensen AD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human Saponin C, SapC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (MAXY-) MAXYGEN APS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80 AA;
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degenerative, neurological and/or auto-immune disease. The polynucleotides and polypeptides are used for diagnosis, prognosis, prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisense sequences). They can also be used to assess efficacy of potential therapeutic agents, particularly compounds that reduce or inhibit toxicity towards glial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (OBRIZ) OBRIEN J S.
                                                                                                                                                         523 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kishimoto Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUL-1993;
                                                                                                                                                                                                                                                                                                                                                                                                    30-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9503821-A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Prosaposin.
                                                                                                                                                                                                                                                                                                                                                                         AAR70783;
                                                                                                                                                            Sequence
                                                                                                                                                                                   Query Match
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                                                                                                            co-factor for the lysosomal enzyme glucocerebrosidase, GCB. GCB is the enzyme involved in Gaucher's disease, a lysosomal storage disease. The involved in Gaucher's disease, a lysosomal sites into lysosomal enzymes/activators like GCB to improve their bloactivity. The novel polypeptides are used for the prevention and treatment of Gaucher's disease, Farber's disease, G_m.l gangliosidosis, Tay-Sach's disease, Niemann-Pick disease, Shindler disease, Hunter syndrome, Sly syndrome, Hurler and Huler/Scheie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; perlecan; retinol-binding plasma protein; calgranulin B; vaccine; ganglioside GMZ activator; saposin B; degenerative disease; glial cell; neurological disease; auto-immune disease; multiple sclerosis; toxicity; Alzheimer's disease; Parkinson's disease; amyotrophic lateral sclerosis; rheumatoid polyarthritis; lupus erythematosus; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        method of the invention. The specification describes a method which uses at least one polypeptide or polynuclectide sequence belonging to the perlecan, precursor of the retinol-binding plasma protein, precursor of the same protein, precursor of the ganglicoside GMZ activator, calgranulin B or saposin B protein families. The method is used for detecting, preventing or treating a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Detecting, preventing and treating degenerative, neurological and autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence represents a human protein, which is used in the
                            Improved lysosomal enzymes and lysosomal enzyme activators useful for treating Gaucher's disease -
                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                      Length 80;
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                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                   Score 101; DB 22;
Pred. No. 7.3e-10;
0; Mismatches 15;
                                                                                                sequence represents human Saponin C (SapC),
                                                                                                                                                                                                                                                                                                                                                           3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Malcus C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Amino acid sequence of a human protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 174-175; 209pp; French.
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                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB31916 standard; Protein; 523 AA
                                                                  Example 5; Page 96; 97pp; English.
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                                                                                                                                                                                                                                                                                   77.18;
                                                                                                                                                                                                                                                                                                 55.9%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 55.9
Matches 19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-159475/16.
WPI; 2001-465259/50
                                                                                                                                                                                                                                                        80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200105422-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-JAN-2001
                                                                                                                                                                                                                             syndromes.
                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB31916;
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AAB3191
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              neurotrophic factor, interleukins-6, -2, -3 and -gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis; adrenal leukodystrophy; prosaposin.
   Length 523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
                                                                  Indels
                                                                  15;
Score 101; DB 22;
Pred. No. 4.6e-09;
0; Mismatches 15;
                                                                                                                                                                                           314 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 347
                                                                                                                              3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
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                                                                                                                                                                                                                                                                                                                                                    AAR70783 standard; Protein; 524 AA
   77.18;
55.98;
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                              Best Local Similarity 55.9
Matches 19; Conservative
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N-PSDB; AAQ85355.
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Length 524;

77.1%; Score 101; DB 16;

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AAY58716
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                                                                                                                                                                                                                                        Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; perlpheral nervous system; central nervous system; PNS; CNS; Akt; Bcl-2; therapy; treatment; apotrosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease; irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; progressive multifocal leukoencephalitis; Alzheimer's disease; progressive multifocal leukoencephalitis; Alzheimer's disease; Barkinson's disease; amyotrophic lateral sclerosis; Huntington's disease; amyotrophic heart disease; dipliain-barre disease; alopecta; AIDS dementia; cerebral malaria; HTLV; neuropathy; inflammatory neurodegenerative disease; toxin-induced liver disease.
               Gaps
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               Indels
55.9%; Pred. No. 4.6e-09; ive 0; Mismatches 15;
                                                        3 CEXCEXXXXEXXXXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                 Human prosaposin N-terminal peptide.
                                                                                                                                  AAW85652 standard; Protein; 524 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Use of prosaposin receptor agonist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 7; Figure 2; 90pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98WO-US19216.
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                                                                                                                                                                                        (first entry)
              19; Conservative
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 Best Local Similarity
Matches 19; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
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                                                                                                                                                             AAW85652;
                                                                                                         RESULT 6
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caspase-mediated or induced by a proinflammatory cytokine, for example TNF alpha or interferon-gamma. It can be used for inhibiting apoptosis associated with a disorder such as e.g. rheumatoid arthritis, Crohn's disease, irritable bowel syndrome, asthma, cardiac infarction, congestive heart failure, multiple sclerosis, acute disseminated inflammatory leukoencephalitis, progressive multifocal leukoencephalitis, Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, Huntington's disease, ischemic heart disease, Guillain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AlDS dementia, cerebral malaria, HTLV, neuropathy, inflammatory neurodegenerative disease, and toxin-induced liver disease. This 524 N terminal peptide of prosaposin also acts as a prosaposin receptor agonist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saposin B derived peptides, useful as inhibitors of angiogenesis and tumor growth -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              196..200
/note= "specifically claimed antianglogenic peptide
of Claim 4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "specifically claimed antiangiogenic peptide of Claim 23"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 524;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 101; DB 20;
Pred. No. 4.6e-09;
0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    315 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
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/note= "mature saposin B"
195..205
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY58716 standard; Protein; 524 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 77.1%;
Best Local Similarity 55.9%;
Matches 19; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0092647.
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                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 524 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-JAN-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY58716;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G111 PS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
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Improved lysosomal enzymes and lysosomal enzyme activators useful for
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAU05698
888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E STATE OF S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; perlecan; retinol-binding plasma protein; calgranulin B; vaccine; ganglioside GMZ activator; saposin B; degenerative disease; glial cell; neurological disease; auto-immune disease; multiple sclerosis; toxicity; Alzheimer's disease; Parkinson's disease; amyotrophic lateral sclerosis; rheumatoid polyarthritis; lupus erythematosus; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence represents a human protein, which is used in the method of the invention. The specification describes a method which us at least one polypeptide or polynucleotide sequence belonging to the perlecan, precursor of the retinol-binding plasma protein, precursor the ganglioside GM2 activator, calgranulin B or saposin B protein families. The method is used for detecting, preventing or treating a degenerative, neurological and/or auto-immune disease. The polynucleotides and polypeptides are used for diagnosis, prognosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Detecting, preventing and treating degenerative, neurological and autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand -
                     antiproliferative and antimigratory activity against endothelial cells. This activity is conserved in cryptic polypeptides as small as 5 amino acids (see AAYS6684.715), which can be synthetically prepared and used in vitro or in vivo for the treatment of undesired angiogenesis and tumor growth, especially Kapoal's sarcome (claimed). The polypeptides can also be used in conjunction with cytotoxic moieties to selectively kill certain cell types, e.g. for treatment of cancer, angiofibroma, neconscular glaucoma, arteriovenous malformation, nonunion fracture, arthritis and other connective tissue disorders, Osler-Weber syndrome, atherosclerotic plaque, psoriabals, corneal graft necowsacularization, pyogenic granuloma, retrolental fibroplasia, diabetic retinopathy, acleroderma, haemangloma, trachoma, vascular adhesions and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
potent antianglogenic and antitumour activity, and also has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Santoro L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 101; DB 21;
Pred. No. 4.6e-09;
0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Malcus C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Amino acid sequence of a human protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 172-173; 209pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB31915 standard; Protein; 527 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Charles M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77.1%;
55.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-JUL-2000; 2000WO-FR02057.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99FR-0009372,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (INMR ) BIOMERIEUX STELHYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 55.9
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kolbe H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-159475/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 524 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hypertropic scars
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200105422-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Roecklin D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB31915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
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prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisense sequences). They can also be used to assess efficacy of potential therapeutic agents, particularly compounds that reduce or inhibit toxicity towards glial
                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; glucocerebrosidase; GCB; lysosomal storage disease; Gaucher's disease; Fabry's disease; Farber's disease; G_m_l anguliosidosis; Tay-Sach's disease; Niemann-Pick disease; Shindler disease; Hunter syndrome; Sly syndrome; Huler syndrome; Scheie syndrome; fusion protein; Saponin C; SapC.
                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human glucocerebrosidase, GCB-Saponin C, SapC, fusion protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schambye HT;
                                                                                                                                                                                                                                 Length 527;
                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                          15;
                                                                                                                                                                                                                            Score 101; DB 22;
Pred. No. 4.6e-09;
0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                         3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jensen RB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "N-glycosylated"
|54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= ."N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81..95
/label- Linker_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Halkier T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU05698 standard; Protein; 592 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99DK-0001891.
2000DK-0000865.
2000DK-0000866.
                                                                                                                                                                                                                                 77.1%;
55.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'label - SapC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6..592
label- GCB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-DEC-2000; 2000WO-DK00743.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000DK-0001027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jensen AD,
                                                                                                                                                                                                         (MAXY-) MAXYGEN APS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-465259/50
                                                                                                                                                                                        527 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200149830-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modifled-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-JUN-2000;
02-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Okkels JS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAU05698;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein
                                                                                                                                                   cells.
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Cyclic; prosaposin; neurotrophic; analgesic; neural growth; cell death; myelination; neurodegenerative disorder; neuropathic pain; vasotropic; saposin C; neuroprotective; vulnerary; analgesic; antiParkinsonian; ophthalmological; demyelination; multiple sclerosis; ischaemic injury; traumatic injury; Parkinson's disease; retinal neuropathy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New peptide derived from saposin C, useful to treat demyelination, neural degeneration and neurological pain, is circular and thus resistant to proteolytic degradation
                                                                                                                                                                                            Human saposin C 22-mer peptide SEQ ID NO:1.
                              1 CEFLVKEVTKLIDNNKTEKEILD 23
                                                                                                           AAY82281 standard; peptide; 21 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 2; 30pp; English.
               6 CEXXXKEXXKXXDNNKXEKEXXD
                                                                                                                                                                16-JUN-2000 (first entry)
                                                                                                                                                                                                                                                                                           ocular neurodegeneration.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wright DE, O'Brien JS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (MYEL-) MYELOS CORP.
                                                                                                                                                                                                                                                                                                                                             WO200012553-A1.
                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                   20-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                              28-AUG-1998;
                                                                                                                                                                                                                                                                                                                                                                         09-MAR-2000
                                                                                RESULT 11
AAY82281
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                                                                                                                                                                                                                                                             ö
                                                  The sequence is a fusion protein of human lysosomal enzyme glucocerebrosidase, GCB and its co-factor, Saponin C, SapC. GCB is the enzyme involved in Gaucher's disease, a lysosomal storage disease. The invention relates to introducing new glycosylation sites into lysosomal enzymes/activators like GCB to improve their bloactivity. The novel polypeptides are used for the prevention and treatment of Gaucher's disease, Farber's disease, G_m_l gangilosidosis, Tay-Sach's disease, Niemann-Pick disease, Shindler disease, Hunter syndrome, Sly syndrome, Hurler and Huler/Scheie
                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to use of a prosaposin-related peptide or derivative, in the production of a medicament for use in preventing or delaying cell death, or in promoting the expression of cell death supporting gene product Bcl-XL. The invention is useful for preventing the death of cells e.g. brain cells, neurons and cardiac muscle cells, in vitro or ex vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Use of prosaposin-related peptides or derivatives as cytoprotective agents, for suppressing apoptosis or apoptosis-like cell death
                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                    Length 592;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 65; DB 22; Length 25;
Pred. No. 0.00029;
0; Mismatches 10; Indels
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sadamoto Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Prosaposin; cell death; Bcl-XL; brain; cardiac muscle.
                                                                                                                                                                                                                                 Score 101; DB 22;
Pred. No. 5.2e-09;
                                                                                                                                                                                                                                                                                        3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 38
                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Morita F,
                           Example 5; Page 96-97; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 12; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sato K,
                                                                                                                                                                                                                                                                                                                                                                                   AAB67289 standard; Peptide; 25
                                                                                                                                                                                                                                 77.18;
55.98;
treating Gaucher's disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 56.5%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99JP-0185155.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-JUN-2000; 2000EP-0305504
                                                                                                                                                                                                                                                                                                                                                                                                                                       20-APR-2001 (first entry)
                                                                                                                                                                                                                                              Best_Local Similarity 55.9
Matches 19, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tanaka J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SAKA/) SAKANAKA M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-204263/21
                                                                                                                                                                                                      592 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TANA/) TANAKA J.
(SATO/) SATO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human saposin C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo saptens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sakanaka M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP1072609-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-JAN-2001
                                                                                                                                                                              syndromes.
                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                              AAB67289;
                                                                                                                                                                                                                                                                                                                                                          RESULT 10
AAB67289
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99WO-US19378

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The present invention describes a cyclic peptide of about 11-25 amino acids containing an analogue of the 11-mer active region of saposin C. The cyclic peptide has merroprotective, vasotropic, vulnerary, analogusic, antiParkinsonian and ophthalmological activities. It stimulates choline acetyltransferase activity. The peptide is used to induce myelination or inhibit demyelination in a mammal, especially a chuman, where demyelination is due to multiple sclerosis, ischaemic injury or traumatic injury, to inhibit neural degeneration or promote neurite outgrowth in neural issue and treat neuropathic pain. The peptide may also be useful treat parkinson's disease, retinal neuropathy, and ocular neurodegeneration leading to viston loss in the electry. The peptide can be used in research to study the effects of neurotrophic factors and myelin facilitating materials, and as components of cell growth media for facilitating and maintaining neural cells in vitro. The invention provides circular prosaposin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptidomimetics which are more resistant to proteolytic degradation and better able to cross the blood brain barrier than prior art linear peptides. The present sequence represents a human saposin C 22-mer peptide given in the disclosure of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21; Length 21;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21 AA;
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The present sequence represents a prosaposin-derived peptide. A method has been developed of alleviating or preventing neuropathic pain in a subject, comprising administering an effective amount of an active fragment of prosaposin to the subject. The prosaposin-derived peptide is useful for therapy of neural or demyelination disorders in neural tissue. It can be used to stimulate neurite outgrowth, inhibit neural cell death, promote myelination or inhibit demyelination. The method is used to alleviate neuropathic pain resulting from a peripheral nerve incomplete nerve transsection, monoeuropathy or polyneuropathy. Alternatively the neuropathic pain results from a disorder of the dorsal root ganglia, spinal cord, brainstem, thalamus or cortex.
neuropathic pain; peripheral nerve disorder; neuroma; mononeuropathy; polyneuropathy; dorsal root ganglia; spinal cord; brainstem; thalamus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               prosaposin; receptor agonist; neuropathic pain; neurite outgrowth; neural cell death; nerve disorder; side effect.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                              Prosaposin-derived peptide - useful for therapy of neural or demyelination disorders in neural tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46.6%; Score 61; DB 18; Length 22; 60.0%; Pred. No. 0.0012; ive 0; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW66127 standard; peptide; 22 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 9; Page 52; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Prosaposin receptor agonist #1.
                                                                                                                                                                                                              96US-0611307.
                                                                                                                                                                        97WO-US04143.
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Matches 12; Conservative
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                                                                                                                                                                                                                                                                                                                        WPI; 1997-470538/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 AA;
                                                           Homo sapiens.
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                                                                                             W09732895-A1
                                                                                                                                                                                                            05-MAR-1996;
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                                                                                                                                                                      05-MAR-1997;
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                                                                                                                                  12-SEP-1997
                                                                                                                                                                                                                                                                                     O'Brien JS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW66127;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The peptide given in AAR7073, corresponding to amino acids 8-29 of human saposin-C (AAR70784), promotes neurite outgrowth in vitro. A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic cytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary neurotrophic factor, interleukins-6, -2, -3 and gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; prosaposin; neural disorder; demyelination disorder; neural cell death; inhibition; myelination; neurite outgrowth;
                                                                                                                                                                                                                                             Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.6%; Score 61; DB 16; Length 22; 60.0%; Pred. No. 0.0012; ive 0; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Olsclosure; Page 30; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prosaposin-derived peptide 22-mer.
                                                                                               Ā
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1 CEFLVKEVTKLIDNNKTEKE 20
                                                                                         AAR70773 standard; peptide; 22
                                                                                                                                                                                                        Saposin-C neurotrophic peptide.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93US-0100247.
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Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Obrien JS;
                                                                                                                                                                                                                                                                 neurotrophic peptide; madrenal leukodystrophy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1995-082029/11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (OBRI/) OBRIEN J S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kishimoto Y,
                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                   28-JUL-1994;
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21-APR-1994;
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                                                                                                                                                                  30-AUG-1995
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                                                                                                                              AAR70773;
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                                                       RESULT 12
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970S-0058352.

04-JUN-1998; 09-SEP-1997; (REGC) UNIV CALIFORNIA.

us-09-780-438c-6.rag

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The invention relates to prosaposin receptor agonists. Also claimed are: (1) methods for alleviating neuropathic pain or inhibiting the conset of neuropathic pain, comprising administering a prosaposin receptor agonist; (2) inhibiting sensory or motor neuropathy, comprising contacting neuronal cells with a composition comprising a prosaposin receptor agonist; (3) methods for stimulating neuristing a prosaposin comprising merial death, promoting myellination, or inhibiting neural cell death, promoting myellination, or inhibiting comprising contacting neuronal cells with a composition comprising a prosaposin receptor agonist which has 14-50 amino acids and comprises the sequence of a propasposin derived protein. The processes of may be used for treatment of neuropathic pain resulting from peripheral nerve disorders (e.g. neuroma, nerve compression, nerve clush, nerve cush, complete nerve transsection, mononeuropathy or polyneuropathy) or disorders of dorsal root ganglia, the spinal cord, the brainstem, the thalamus or the cortex. The receptor agonists do not cause undesirable side effects. The present sequence represents a specifically claimed by procession processed by a specifically claimed by a process of a prosaposin receptor agonist.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                        Use of prosaposin receptor agonists - for alleviating neuropathic abin, inhibiting sensory or motor neuropathy, or inhibiting neural cell death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; peripheral nervous system; central nervous system; PNS; CNS; Akt; Bel-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease;
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                                                                                                                                                                                                                                                                                                                                                                          Claim 3; Page 2; 67pp; English.
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Best Local Similarity 60.0 Matches 12; Conservative
                                                                              WPI; 1998-495790/42.
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                                                                                                                     N-PSDB; AAV07664
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O'Brien JS;
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Prosaposin is a 70kDa glycoprotein which is proteclytically processed to generate saposins A, B, C and D, all of which are similar to each other and have a similar placement of six cysteines, a glycosylation of site and conserved prolline residues. Prosaposin, saposin C and a similar placement of six cysteines, a glycosylation constructed peptides (prosaptides), have therapeutic applications in promoting recovery after toxic, traumatic, myocardial ischemamic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit prolifiammatory cytokine-induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bol-2 family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members, such as BAD-Bol-2, releasing Bol-2 and its family members which inhibit caspases, thereby inhibiting apoptosis. An activation of JNK, a proapoptotic signaling component. Within several minutes after binding to the receptor, PRAs block JNK activation of JNK by TNF alpha is another well known mechanism for TNF alpha-induced by tumor necrosis factor-alpha (TNF alpha). The activation of JNK by TNF alpha is another well known mechanism for TNF alpha is other proinflammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis with a disease, irritable bowel syndrome, asthma, cardiac apoptosis associated with a disease, is themmatory such and the disease, infarction, congestive heart failure, multiple sclerosis, acute and toxin-induced apoptosis, and disease, dillannatory leukoencephalitis, progressive multifocal leukoencephalitis, according and toxin induced sease, Guillannatory neurodegenerative disease, and toxin-induced sease. This peptide corresponds to amno acids 8 to 29 of human saposin C (See Aww85653) and acts as prosaposin receptor
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Job time: 30.7179 secs
                                                                                                                                                                                                               Use of prosaposin receptor agonist
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                                                                                                                                                            WPI; 1999-229139/19.
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nes 12; Conserv
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                                                                                                                  O'brien JS;
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US-09-780-438C-6 131 1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283224 seqs, 96134422 residues Searched:

283224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	saposin precursor	saposin-C - bovine	glucosylceramide b	saposin precursor	saposin precursor	hypothetical prote	-	1-phosphatidylinos	hypothetical prote		P109 protein - sil	probable transqlyc	cell wall-binding	hypothetical prote	c	hypothetical prote	_	_			hypothetical prote	probable transcrip	protein ZC123.3 [i	UDP-glucose-glycop	hypothetical prote	_	-	-	-
SUMMARIES	ΔΙ	SAHUP	S21770	A32026	A28716	JH0604	T46339	A28822	A28821	T15674	S41853	T00207	T12796	F70031	T18450	H69472	T33068	T39392	S54014	T08778	B86132	G91290	T52114	G87721	T19214	S44639	T28771	T25911	168	T20764
	DB	Н	ď	N	-	-	~	7	~	7															~	7	7	~	~	7
	Query Match Length	527	90	81	554	557	913	1216	1216	314								347	519	570	731	735	165	263	1377	189	210	211	315	572
	Query	77.1	64.1	9.9	5.1	2.8	2.8	32.8	5.8	2.1	2.1	2.1	2.1	31.7	.3	0.5	30.5	0.5	5	0.5	0.5	.5	0.5	0.5	0.7	8.6	9.8	8.6	29.8	g.
æ	D R	7	ø	4	m	m	e	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	~	~	71	~	~
	Score	101	84	61	46	43	43	43	43	42		43	4	41.5	41	40	40	40	40	40	40	4	•	6	6	39	39	39	39	39
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type III DNA modif	. 1-phosphatidylinos	hypothetical prote	rifin PFB0040c - m	hypothetical prote	chromatinic RING f	hypothetical prote	hypothetical prote	hypothetical prote	SPT6 protein - yea	variant-specific s	dnaK-type molecula	fumarate reductase	dnaK-type molecula	sperm tall-specifi	85K major surface
F71810	A53430	T22330	B71625	F84636	F71614	B71884	D64630	T19694	A36468	T28155	T14261	D64311	S21880	S51364	A24154
7	П	ď	a	7	~	a	N	ď	N	N	N	-	ď	~	0
641	1173	3498	330	183	268	614	614	921	1451	2706	264	489	668	1390	139
29.8	29.8	29.8									28.6	28.6	28.6	28.6	28.2
39	39	39	38.5	38	38	38	38	38	38	38	37.5	37.5	37.5	37.5	37
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT 1
Saposin precursor [validated] - human N;Alternate names: cerebroside sulfate activator protein; co-beta-glucosidase; componein (SAP); sphingolipid activator protein A2; sulfatide sulfatase activator protein N;Contains: prosaposin; saposin A; saposin B; saposin C; saposin D
C;Species: Homo sapiens (man) C;Date: 30-Jun-1992 #sequence_revision 17-Nov-1995 #text_change 08-Dec-2000 C;Accesion: JX0061; A57368; A42003; B42003; C42003; D42003; A30367; S34740; S36140;
0220; 13/203; 25/204 R;Nakano, T.; Sandhoff, K.; Stuemper, J.; Christomanou, H.; Suzuki, K. J. Blochem. 105, 152-154, 1989
A; Title: Structure of full-length cDNA coding for sulfatide activator, a Co-beta-glucal ARReference number: JX0061; MUID:89255151; PMID:2498298
A;Accession: JAVOOI A;Molecule type: mRNA A:Residues: 1:527 <nak></nak>
A; Cross-references: GB: D00422; NID: 9220063; PIDN: BAA00321.1; PID: 9220064 A: Note: alternative splice form
A; Accession: A57368
A; Residues: 1-259, 263-527 <na2></na2>
A;Cross-references: GB:J03015; GB:J03086; NID:g337755; PIDN:AAB59494.1; PID:g337756 A;Note: alternative splice form 2
R;Rorman, E.G.; Scheinker, V.; Grabowski, G.A. Genomics 13, 312-318, 1992
A, Title: Structure and evolution of the human prosaposin chromosomal gene.
A; Kererence number: A4z003; MUID:9z307603; FMID:161z390 A; Accession: A42003
A;Molecule type: DNA A;Residues: 50-140 <ror></ror>
A;Cross-references: GB:M86181 A:Note: commons extracted from NCBI hackbone (NCBIN:107235 NCBID:107235)
A Accession: B4 2003
A;Molecule Lype: DNA A;Residues: 185-259;263-276 <ro2></ro2>
A;Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107237) A;Accession: C42003
A; Molecule type: DNA A: Residues: 305-393 <r03></r03>
A; Note: sequence extracted from NCBI backbone (NCBIN:107235, NCBIP:107238); sequence
A, Accession: Descoulable type: DNA A, Enclosite type: DNA A, Enclosite type:
ъ
k;korman, E.G.; Grabowski, G.A. Genomics 5, 486–492, 1989
A;Title: Molecular cloning of a human co-beta-glucosidase cDNA: evidence that four sp A;Reference number: A30367; MUID:90129043; PMID:2515150
A;Accession: A30367 A;Molecule type: mRNA
A; Residues: 1-259, 263-527 <ro5></ro5>

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Eur J. Biochem. 192, 709-714, 1990
Afritie: The complete amino-acid sequences of human ganglioside GMZ activator protein
A; Reference number: S13195; MUID:91006165; PMID:2209618
A; Accession: S13196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Molecule type: protein
A; Residues: 60-84;86-107;109-119;125-134 <MOR>
B; O'Brien, J.S.; Kretz, K.A.; Dewji, N.; Wenger, D.A.; Esch, F.; Fluharty, A.L.
Science 241, 1098-1101, 1988
A; Title: Coding of two sphingolipid activator proteins (SAP-1 and SAP-2) by same gene
A; Reference number: A41240; MUID:88321660; PMID:2842863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A Molecule type: protein
A:Residues: 410-487 <FU2>
B:Residues: 800226; MUD:88163077; PMID:3442600
A:Recession: 800226
B:Residues: 314-393 <KLZ>
B:Residues: 314-393 <KLZ
B:Residues: 3
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A,Residues: 195-259,263-276 <KLE>
A,Residues: 195-259,263-276 <KLE>
B; Flearst, W.; Machleidt, W.; Sandhoff, K.
Biol. Chem. Hoppe-Seyler 369, 317-328, 1988
A;Title: The precursor of sulfatide activator protein is processed to three different
A;Reference number: S00813; MUID:89000190; PMID:3048308
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A; Residues: 'GSSR', 18-259, 263-299, 'D', 301-302, 'D', 304-527 <OAB>
A; Residues: 'GSSR', 18-259, 263-299, 'D', 301-302, 'D', 304-527 <OAB>
Cross-references: GB:J03086
R; Dewjl, N.M.; Wenger, D.A.; O'Brien, J.S.
Proc. Natl. Acad. Sci. U.S.A. 84, 8652-8656, 1987
A; Title: Nucleotide sequence of cloned cDNA for human sphingolipid activator protein
A; Reference number: S02289; MUID:88068647; PMID:2825202
A; Accession: S02289
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A; Residues: 195-259, 363-277 <FUE>
R; Morimoto, S.; Martin, B.M.; Yamamoto, Y.; Kretz, K.A.; O'Brien, J.S.; Kishimoto,
Proc. Natl. Acad. Sci. U.S.A. 86, 3389-3393, 1989
A; Title: Saposin A: second cerebrosidase activator protein.
A; Reference number: A32784; MUID:89240739; PMID:2717620
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A, Accession: 137265
A, Status: translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Reaidues: 59-125 < RES>
A; Cross-references: EMBL: X57107; NID: g30234; PIDN: CAA40391.1; PID: g30235
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A; Note: part of this sequence, including the amino end of R; Kleinschmidt, T.; Christomanou, H.; Braunitzer, G.
Biol. Chem. Hoppe-Seyler 369, 1361-1365, 1988
A; Title: Complete amino-acid sequence of the naturally of R; Reference number: S02028; MUID:89207118; PMID:3242555
A; Accession: S02028
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A;Molecule type: mRNA
A;Cross-references: EMBL:J03015
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A; Residues: 307-516 <RE2>
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                                              A.Note: alternative splice form 2
R:Hiralwa, M.; O'Brien, J.S.; Kishimoto, Y.; Galdzicka, M.; Fluharty, A.L.; Ginns, E.I.;
Arch. Biochem. Biophys. 304, 110-116, 1993
A;Title: Isolation, characterization, and proteolysis of human prosaposin, the precursor A;Reference number: S34740
A;Recession: S34740
A;Molecule type: protein
A;Residues: 17-24;165-172:180-189;301-305 <HIR>
B;Tyynelae, J.; Palmer, D.N.; Baumann, M.; Haltia, M.
A;Residues: J. Palmer, D.N.; Baumann, M.; Haltia, M.
A;Title: Storage of saposins A and D in Infantile neuronal ceroid-lipofuscinosis.
A;Recession: S36140; MUID:93380576; PMID:8370464
A;Recession: S36140
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A; Cross-references: EMBL:M60258; NID:g337766; PIDN:AAA36596.1; PID:g337767
A; Cross-references: EMBL:M60258; NID:g337766; PIDN:AAA36596.1; PID:g337767
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A; Note: cerebroside activator protein mutant MU-6; corresponds to alternative sp R; Kondoh, K.; Hineno, T.; Sano, A.; Rakimoto, Y.
Biochem. Biophys. Res. Commun. 181, 286-292, 1991
A; Title: Isolation and characterization of prosaposin from human milk.
A; Reference number: PS0330; MUID:92068206; PMID:1958198
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A;Residues: 213-216,'I',218-221 <KR3>
A;Note: sequence from patients with activator-deficient metachromatic leukodystrophy; th
R;Fuerst, W.; Schubert, J.; Machleidt, W.; Meyer, H.E.; Sandhoff, K.
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A; Molecule type: protein
A; Residues: 17-24, 'X', 26 cKON>
A; Residues: 17-24, 'X', 26 cKON>
A; Residues: 17-24, 'X', 26 cKON>
A; Residues: 17-24, 'X', 26
A; Residues: A.A.; Carson, G.S.; Morimoto, S.; Kishimoto, Y.; Fluharty, A.L.; O'Brien, J.S.
Proc. Natl. Acad Sci. U.S.A. 87, 2541-2544, 1990
Proc. Natl. Acad Sci. U.S.A. 87, 2541-2544, 1990
A; Title: Characterization of a mutation in a family with saposin B deficiency: a glycosy A; Reference number: A35985; MUID:90207231; PMID:2320574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Residues: 'XXX', 413-414, 'X', 416-428, 'X', 430-434 <TY2>
A; Residues: 'XXX', 413-414, 'X', 416-428, 'X', 430-434 <TY2>
A; Note: saposin D
B; Holtschmidt, H.; Sandhoff, K.; Kwon, H.Y.; Harzer, K.; Nakano, T.; Suzuki, K.
J. Biol. Chem. 266, 7556-7560, 1991
A; Title: Sulfatide activator protein. Alternative splicing that generates three mRNAs a A; Accession: S36988; MUID:91210267; PMID:2019586
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A: Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A: Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A: Note: exerbroaside sulfate activator protein mutant MU-9; corresponds to alternative shancession: S36989
A: Status: nucleic acid sequence not shown; translation not shown
A: Molecule type: mRNA
A: Residues: 1-240, S/, 242-259, 263-527 < HO2>
A: Residues: 1-240, S/, 242-259, 263-527 < HO2>
A: Residues: 1-240, S/, 242-259, 263-527 < HO2>
A: Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A: Note: cerebrooside sulfate activator protein mutant MU-0; corresponds to alternative shancession: S36990
A: Status: nucleic acid sequence not shown; translation not shown
A: M: Note: Laborator Division MU-0; corresponds to alternative shown and the mutant MU-0; corresponds to alternative shown and th
A;Cross-references: GB:J03077; NID:g183230; PIDN:AAA52560.1; PID:g183231
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A;Residues: 'XX',62,'X',64-65,'X',67-79,'X',81-84 <TYY>
A;Note: saposin A
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A; Residues: 213.221 CKRE>
A; Cross-references: GB:M32221
A; Accession: B35985
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C;Accession: A28716
R;Collard, M.W.; Sylvester, S.R.; Tsuruta, J.K.; Griswold, M.D.
Blochemistry 27, 4557-4564, 1988
A;Title: Blosynthesis and molecular cloning of sulfated glycoprotein 1 secreted by ra
A;Reference number: A28716; MUID:89000647; PMID:3048385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C. Function:
A; Description: saposins bind sphingolipids, form hydrophilic complexes and make them
A; Pathway: sphingolipid catabolism
A; Pathway: sphingolipid catabolism
A; Pathway: sphingolipid catabolism
A; Note: saposins A and C (SAP-1) activate hydrolysis of galactocerebroside by beta-gluc
A; Note: saposin B (SAP-1) activates hydrolysis of galactocerebroside sulfate by aryls
A; Note: saposin D activates hydrolysis of sphingomyelin by sphingomyelin phosphodiest
C; Superfamily: saposin; saposin repeat homology
C; Keywords: alternative splicing; glycoprotein; lysosomal storage disease; lysosome;
F; 11-554/Product: prosaposin #status predicted <PRO>
F; 60-143/Product: saposin repeat homology <SAPD>
F; 60-143/Product: saposin repeat homology <SAPD>
F; 189-280/Domain: saposin E #status predicted <SAPD>
F; 189-280/Domain: saposin repeat homology <SAPD>
F; 180-380/Product: saposin Repeat homology <SAPD>
F; 180-380/Product: saposin repeat homology <SAPD>
F; 180-380/Product: saposin repeat homology <SAPD>
F; 180-280/Domain: saposin rep
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C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C; Rccession: 100604
R; Tsuda, M.; Sakiyama, T.; Endo, H.; Kitagawa, T.
Blochem Biophys. Res. Commun. 184, 1266-1272, 1992
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                                                                                                                                                                                                                                                                                                                                                                                                        A;Wolecule type: mRNA
A;Residues: 1-554 <COL
A;Cross-references: GB:M19936; NID:g206904; PIDN:AAA42136.1; PID:g206905
A;Note: parts of this sequence, including the amino end of the mature protein, were d
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                 C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
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A;Residues: 1-557 <TSU>
A;Cross-references: GB:S36200; NID:g249386; PIDN:AAB22175.1; PID:g249387
A;Experimental source: liver
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A;Reference number: JH0604; MUID:92272718; PMID:1590788
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5; Mismatches
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25.0%;
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Best Local Similarity 25.0°
Matches 8; Conservative
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C.Species: Bos primigenius taurus (cattle)
C.Accession: $21770
R.Sano, A.; Mizuno, T.; Kondoh, K.; Hineno, T.; Ueno, S.; Kakimoto, Y.; Morita, N.
Balochin. Blophys. Acta 1120, 75.80, 1992
A.Title: Saposin-C from bovine spleen; complete amino acid sequence and relation between A.Reference number: $21770; MUID:92207994; PMID:1554743
A.Scession: $21770
A.Status: preliminary
A.Status: preliminary
A.Status: proceed the complex of the complex of
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C;Species: Cavia porcellus (guinea pig)
C;Date: O'Jun-1990 #sequence_revision 07-Jun-1990 #text_change 17-May-1996
C;Accession: A33026
R;Sano, A; Radin, N.S.; Johnson, L.L.; Tarr, G.E.
A; Biol. Chem. 263, 19597-19601, 1988
A;Title: The activator protein for glucosylceramide beta-glucosidase from guinea pig liv
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                                                                                                  A; Map position: 10g22.1-10g22.1
A;Introns: 83/3; 338/3; 401/1; 453/3; 480/3
A;Note: defects in this gene may cause variant Gaucher disease, variant Tay-Sachs diseas
A;Note: 11st of introns is incomplete
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                                                                                                                                                                                                                                                                                                                                                                                            77.1%; Score 101; DB 1; I
illarity 55.9%; Pred. No. 2.6e-09;
Conservative 0; Mismatches 15;
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Pred. No. 3.8e-07;
3; Mismatches 16
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Pred. No. 0.0026;
6; Mismatches 10
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C; Superfamily: saposin repeat homology
F;1-81/Domain: saposin repeat homology <SAP>
A;Gene: GDB:PSAP; GLBA
A;Cross-references: GDB:120366; OMIM:176801
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Best Local Similarity 44.1%;
Matches 15; Conservative
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A;Molecule type: protein
A;Residues: 1-81 <SAN>
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les 19; Conserv
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F;539-659/Domain: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase domain Y F;887/Binding site: phosphate (Ser) (covalent) (by protein kinase C) #status experime
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A;Cross-references: EMBL:U40797; NID:g1065916; PID:g1065918; PIDN:AAB37550.1; GSPDB:GA;Experimental source: strain Bristol N2; clone C28C12
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A.Experimental source: brain
C.Superfamily: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase 1; 1-phospha
odiesterase domain Y homology
C.Kewpords: phosphorrotein; phosphoric diester hydrolase
F:318-467/Domain: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase domain X
F:539-659/Domain: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase domain X
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C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 20-Sep-1999
C;Accession: T15674
R;Miller, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N.Alternate names: triphosphoinositide phosphodiesterase
C.Species: Rattus norvegicus (Norway rat)
C.Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 22-Jun-1999
                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Accession: A28621
E; Sub, P.G.; Ryu, S.H.; Moon, K.H.; Sub, H.W.; Rhee, S.G.
Cell 54, 161-169, 1988
A; Title: Cloning and sequence of multiple forms of phospholipase A; Reference number: A90899; MUD:88270495; PMID:3390863
A; Recenter type: mRNA
A; Residues: 1-1216 <SUH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32.8%; Score 43; DB 2; Length 1216; larity 42.9%; Pred. No. 23; Conservative 1; Mismatches 11; Indels
                                                                                                         Length 1216;
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A; Description: The sequence of C. elegans cosmid C28C12.
A; Reference number: 218387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
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                                                                                                         ä
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Pred. No. 11;
5; Mismatches
                                                                                                     Score 43; DB
Pred. No. 23;
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11;
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A; Introns: 76/2; 172/3; 210/3; 256/3; 281/3
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26.9%;
                                                                        Query Match
Best Local Similarity 42.5%
Best Local 9, Conservative
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Matches 9; Conserv
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C;Superfamily: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase I; 1-phosphatid
odiseterase domain Y homology
F;58-207/Domain: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase domain X homo
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A; Molecule type: protein
A; Residues: 879-889 <RVD.
C; Superfamily: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase I; 1-phosphatid
odiesterase domain Y homology
C; Keywords: phosphorotein; phosphoric diester hydrolase
E; 318-467/Domain: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase domain X hom
F;194-276/Product: saposin B *status predicted <SAB1>
F;309-400/Domain: saposin repeat homology <SAP3>
F;313-392/Product: saposin C *status predicted <SAPC>
F;434-525/Domain: saposin repeat homology <SAPC>
F;434-552/Domain: saposin D *status predicted <SAPD>
F;440-517/Product: saposin D *status predicted <SAPD>
F;63-138,66-132,94-106,197-273,200-267,229-240,317-390,320-384,348-359,442-515,445-509,F;80,214,334,379,459/Binding site: carbohydrate (Asn) (covalent) *status predicted
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A; Residues: 1-1216 < KRAT-
A; Residues: 1-1216 < KRAT-
A; Cross-references: GB: J03137; NID: g163521; PIDN: AAA30702.1; PID: g163522
A; Cross-references: GB: J03137; NID: g163521; PIDN: ABA; Carpenter, G.; Huang, K.P.; Rhee, S.G. R; Ryu, S.H.; Kim, U.H.; Wahl, M.I.; Brown, A.B.; Carpenter, G.; Huang, K.P.; Rhee, S.G. A; Blod. Chem. S55; 17941-17945, 1990
A; Title: Feedback regulation of phospholipse C-beta by protein kinase C.
A; Reference number: A39236; MUID: 91009263; PMID: 2211670
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C;Date: 04-Feb-2000 #sequence_revision 04-Feb-2000 #text_change 02-Sep-2000
C;Accession: T46339
R;Koehrer, K; Beyer, A.; Mewes, H.W.; Gassenhuber, J.; Wiemann, S.
submitted to the Protein Sequence Database, January 2000
A;Reference number: 223037
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Pred. No. 19;
1; Mismatches 11; Indels
                                                                                                                                                                                                                                                         32.8%; Score 43; DB 1; Length 557; llarity 21.9%; Pred. No. 12; Conservative 6; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Residues: 1-913 cAAA>
A;Cross-references: EMBL:AL137267
A;Experimental source: adult testis; clone DKF2p434A0814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein DKFZp434A0814.1 - human (fragment)
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Best Local Similarity 42.9%;
Matches 9; Conservative
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Matches 7; Conserv
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A;Status: preliminary
A;Molecule type: mRNA
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C;Accession: T12796; A69911
R;Lazarevic, V.; Duesterhoeft, A.; Soldo, B.; Hilbert, H.; Mauel, C.; Karamata, D. submitted to the EMBL Data Library, August 1997
A;Description: The complete nucleotide sequence of the Bacillus subtills SPbetac2 pro A;Reference number: Z17583
A;Accession: T12796
                                                                                                                                                                                                                                                                                                 A;Status: translated from GB/EMBL/DDBJ
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2285 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 <1.2385 
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A;Molecule type: DNA
A;Residues: 1-2285 < XUN>
A;Residues: 1-2285 < XUN>
A;Cross-references: GB:Z99115; GB:AL009126; NID:92634478; PIDN:CAB14053.1; PID:e11835
A;Experimental source: strain 168
C;Species: Bacillus subtilis phage SPBc2
C;Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 15-Oct-1999
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Pred. No.
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38.5%;
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Best Local Similarity
Matches 10; Conserv
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                                                                       centromere/microtubule-binding protein CBF5 [validated] - yeast (Saccharomyces cerevisia N;Alternate names: protein L9470.11; protein YLR175w C;Species Saccharomyces cerevisiae C;Species Saccharomyces cerevisiae C;Species Sarcharomyces cerevisiae C;Date: 31-Mar-1992 *sequence_revision 14-Sep-1994 *text_change 26-May-2000 C;Accession: S41853; S45443; S51420 C;Accession: S41853; S45443; S51420 Mol. CBP, R;Yangy W.; Middleton, CBF5p, binds in vitro to centromeres and microtubul A;Fitle: An essential yeast protein, CBF5p, binds in vitro to centromeres and microtubul A;Reference number: S41853; MUID:93330283; PMID:8336724
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6ane 12, 287-293, 1998
A; Title: Molecular cloning of a cDNA encoding a silkworm protein which contains the cons A; Reference number: 214124; WUID:98278844; PMID:9611271
A; Accession: T00207
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
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A;Residues: 1-483 <WOHD
A;Crosidues: 1-463 <WOHD
A;Crosidues: EMBL:U17246; NID:9577192; PIDN:AAB67463.1; PID:9577203; GSPDB:GN0001
C;Genetics:
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C;Superfamily: saposin repeat homology
F;778-870/Domain: saposin repeat homology <SAP3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Description: binds centromeres and microtubules [validated, MUID: 93330283]
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C;Species: Bombyx mori (silkworm)
C;Date: 22-Jan.1999 *sequence_revision 22-Jan-1999 *text_change 21-Jul-2000
C;Accession: T00207
                                                                                                                                                                                                                                                                                                                                                                                                                               A) Accession: S41853
A) Molecule type: DNA
A) Residues: 1-483 <-JIA>
A) Residues: 1-483 <-JIA>
A) Rocession: S45443
A) Ancession: S45443
A) Ancession: S45443
A) Ancession: S45443
A) Residues: 36-45;142-149;168-175;385-401 <-JI2>
B) Wohldmann, P
Submitted to the EMBL Data Library, November 1994
A) Description: The sequence of S. cerevisiae cosmid 9470.
A) Reference number: S51414
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Pred. No. 28;
3; Mismatches 21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Length 483;
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Pred. No. 16;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: SGD:S0004165; MIPS:YLR175w
A;Map position: 12R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;434-463/Region: Lys-Lys-Glu/Asp repeats
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Best Local Similarity 25.0%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Gene: SGD: CBF5; MIPS: YLR175w
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Matches
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Gaps

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Length 2285; Indels

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cill wall-binding protein homolog yvcE - Bacillus subtilis
C;Species: Bacillus subtilis
C;Species: Bacillus subtilis
C;Species: Bacillus subtilis
C;Species: Forcession: F70031
C;Accession: F70031
C;Accession: F70031
C;Accession: F70031
C;Bernich: S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.;
A; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, Nature 390, 249-256, 1997
A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galicch, J.; Harvod, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Houlor, M.; Authors: Lauber, J.; Landino, M.; Kurita, K.; Lapidus, A.; Lardino A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Muly, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portete Rieger, M.; Rivolta, C.; Roche, B.; Rose, M.; Sadale, Y.; Sato, T.; Scanl A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekgyuchi, J.; Sekowska, A.; Seakeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiya A;Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtili
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A; Cross-references: GB: Z99121; GB: AL009126; NID: 92635827; PIDN: CAB15485.1; PID: e11861
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Incordependent repressor homolog - Archaeoglobus fulgidus
C;Species: Archaeoglobus
C;Accession: H6442.
R;Klenk, H.P.; Clayton, R.A.; Tomb, J.F.; White, O.; Nelson, K.E.; Ketchum, K.A.; Dodson.
; Fleischmann, R.D.; Quackenbush, J.; Lee, N.H.; Sutton, G.G.; Gill, S.; Kirkeess, E.F.
Glodek, A.; Zhou, L.; Ovarbeek, R.; Gocayne, J.D.; Weidman, J.F.; McDonald, L.
Nature 390, 364-370, 1997
A;Auterback, T.; Cotton, M.D.; Spriggs, T.; Artiach, P.; Kaine, B.P.; Sykes, S.
Smith, H.O.; Woese, C.R.; Venter, J.C.
A;Tile: The complete genome sequence of the hyperthermophilic, sulfate-reducing archaeogly status: preliminary; nucleic acid sequence not shown; translation not shown
A;Accession: H69472
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Residues: 1-191 < KLE>
A;Cross-references: GB:AE000979; GB:AE000782; NID:q2689302; PIDN:AAB89462.1; PID:q264876
C;Superfamily: conserved hypothetical protein MJ0568
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C; Species: Plasmodium falciparum
C; Species: Sp
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                                                                                                                                                                                                                      DB 2; Length 473;
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                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                    12;
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                                                                                                                                                                                                      Query Match 31.7%; Score 41.5; D
Best Local Similarity 40.7%; Pred. No. 19;
Matches 11; Conservative 3; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CEVCESCTQEYLSLSDATEGEYE 143
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A;Experimental source: strain 168
C;Genetics:
A;Gene: yvcE
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Job time: 14.641 secs
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A; Introns: 15/3; 169/1
A; Note: C0570c
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GenCore version 5.1.6
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OM protein - protein search, using sw model

June 2, 2003, 14:14:13 ; Search time 6.82051 Seconds (without alignments) 231.082 Million cell updates/sec Run on:

US-09-780-438C-6 131 1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXXXX 38 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

112892 seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt_40:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Description	P07602 h proactiva	P26779 b proactiva	cavia	gallus	rattus	Q61207 mus musculu	pos	Q9nq66 homo sapien	rattn	P33322 saccharomyc	Q53957 streptococc			Q04347 saccharomyc	P41880 caenorhabdi		Ol3473 kluyveromyc		P23615 saccharomyc	_	P49118 lycopersico	Q03685 nicotiana t	drosc		chond	homo	homo	sacch	O15516 homo sapien		Q94738 strongyloce		
SUMMARIES		A	SAP_HUMAN	SAP_BOVIN	SAP_CAVPO	SAP_CHICK	SAP_RAT	SAP_MOUSE	PIB1_BOVIN	PIB1_HUMAN	PIB1_RAT	CBF5_YEAST	TACY_STRCB	TACY_STREQ	YVCE_BACSU	YMP4_YEAST	YPT2_CAEEL	NH25_CAEEL	CBF5_KLULA	Z217_HUMAN	SPT6_YEAST	Y092_METJA	BIP_LYCES	BIP5_TOBAC	MST2_DROHY	NEUM_HUMAN	ACT_CHOCR	DEK_HUMAN	ZIM3_HUMAN	YBY8_YEAST	CLOC_HUMAN	CLOC_MOUSE	HS97_STRFN	BIP2_ARATH	BIP1_ARATH
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ALIGNMENTS

CHUCHENIA	JUS COL	SEQUENCE F MEDLINE=89 MARANO T., "Structure Co-beta-91 forms of t J. Blochem [3] SQUENCE F TISSUE=EYE Strausberge	RI Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases. RN [4] RN [4] RN [4] RN [4] RN [4] RN FEDURACE OF 59-125 AND 304-513 FROM N.A. REQUINCE OF 59-125 AND 304-513 FROM N.A. RA MEDLINE-91192146; PubMed-2013321; RA HOLtschmidt H., Sandhoff K., Fuerst W., Kwon H.Y., Schnabel D., RA Suzuki K.; "The organization of the gene for the human cerebroside sulfate RT activator protein."; RT activator protein."; RN FEBS Lett. 280:267-270(1991). RN FEBS Lett. 280:267-270(1991). RN FEBS Lett. 280:868647; PubMed-2825202; RN MEDLINE-88068647; PubMed-2825202; RA Dewyl N.N., Wenger D.A., O'Brien J.S.; RA Dewyl N.N., Wenger D.A., O'Brien J.S.; RA Dewyl In Precursor.";

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B)
                                                                                                                                                                                                                                                                                                                          MEDINE-89207118; PubMed-324255;
Kleinschmidt T., Christomanou H., Braunitzer G.;
"Complete amino-acid sequence of the naturally occurring A2 activator
protein for enzymic sphingomyelin degradation: identity to the
sulfatide activator protein (SAP-1).";
                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-88163077; PubMed-3442600; Kleinschmidt T., Christomanou H., Braunitzer G.; Complete amino-acid sequence and carbohydrate content of the naturally occurring glucosylceramide activator protein (Al activator) absent from a new human Gaucher disease variant."; Biol. Chem. Hoppe-Seyler 368:1571-1578(1987).
                                                                                                                                                                                                                                                    Furst W., Schubert J., Machleidt W., Meyer H.E., Sandhoff K.;
"The complete amino-acid sequences of human ganglioside GM2 activator
protein and cerebroside sulfate activator protein.";
Eur. J. Biochem. 192:709-714(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89000190; PubMed-3048308;
Furst W., Machleidt W., Sandhoff K.;
"The precursor of sulfatide activator protein is processed to three
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 luharty A.L., Lombardo C., Louis A., Stevens R.L., Whitelegge J., Paring A.J., To T., Fluharty C.B., Faull K.F.; Preparation of the cerebroside sulfate activator (CSAct or saposin
                                                                                                                                                 Hill F., O'Brien J.S.; "Molecular cloning of the sphingolipid activator protein-1 (SAP-1), the sulfatide sulfatase activator."; Blochem. Blophys. Res. Commun. 134:989-994(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kondoh K., Hineno T., Sano A., Kakimoto Y.;
*Isolation and characterization of prosaposin from human milk.";
Blochem. Blophys. Res. Commun. 181:286-292(1991).
                                                Morimoto S., Martin B.M., Yamamoto Y., Kretz K.A., O'Brien J.S.,
                                                                                                            SEQUENCE OF 195-263 FROM N.A.
MEDLINE-86130593; PubMed-2868718;
Dewjl N.N., Wenger D.A., Fujibayashi S., Donoviel M., Esch F.,
Hill F., O'Brien J.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE (SAPOSIN B), AND STRUCTURE OF CARBOHYDRATES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-21110404; PubMed-11180632;
Faull K.F., Johnson J., Kim M.J., To T., Whitelegge J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-89025876; PubMed-2845979; Morlincto S., Martin B.M., Kishimoto Y., O'Brien J.S.; Maposin D: a sphingomyellanse activator."; Biochem. Biophys. Res. Commun. 156:403-410(1988).
                                                                        "Saposin A: second cerebrosidase activator protein.";
Proc. Natl. Acad. Sci. U.S.A. 86:3389-3393(1989).
Proc. Natl. Acad. Sci. U.S.A. 84:8652-8656(1987),
                                                                                                                                                                                                                                                                                                                                                                               sulfatide activator protein (SAP-1).";
Biol. Chem. Hoppe-Seyler 369:1361-1365(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biol. Chem. Hoppe-Seyler 369:317-328(1988)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genet. Metab. 68:391-403(1999).
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                       DF 60-142.
PubMed=2717620;
                                                                                                                                                                                                                                        MEDLINE-91006165; PubMed-2209618;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL SEQUENCE OF 405-484
                                                                                                                                                                                                                SEQUENCE OF 195-274.
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                         SEQUENCE OF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       different proteins.
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                                    MEDLINE-89240739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       from human urine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Flubarty A.L.,
                                                               Kishimoto Y.;
                                                                                                                                                                                                                               rissue-Kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IISSUE-Urine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rissue-mil)
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Hum. Mutat. 4:233-242(1994).

-I- FUNCTION: The lysosomal degradation of sphingolipids takes place by the sequential action of specific hydrolases. Some of these enzymes require specific low-molecular mass, non-enzymic proteins: the sphingolipids activator proteins (coproteins).

-I- FUNCTION: Saposin A and saposin C stimulate the hydrolysis of glucosylceramide by beta-glucosylceramidase (EC 3.2.1.45) and galactosylceramide by beta-galactosylceramidase (EC 3.2.1.46). Saposin C apparently acts by combining with the enzyme and action to form an activated complex, rather than by solubilizing
                                                 porcine kidney and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schnabel D., Schroeder M., Sandhoff K.;
"Mutation in the sphingolipid activator protein 2 in a patient with a
variant of Gaucher disease.";
FEBS Lett. 284:57-59(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FUNCTION: Saposin D is a specific sphingomyelin phosphodiesterase activator (EC 3.1.4.12).
SUBUNIT: Saposin B is a homodimer.
SUBCELLULAR LOCATION: Lysosomal.
ALTERNATIVE PRODUCTS: At least 3 isoforms; sap-mu-0 (shown here),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of the
                                                                                                                                                                                                                                                                                                                Faull K.F., whitelegge J.P., Higginson J., To T., Johnson J., Krutchinsky A.N., Standing K.G., Waring A.J., Stevens R.L., Fluharty C.B., Fluharty A.L.;
"Cerebroside sulfate activator protein (Saposin B): chromatographic and electrospray mass spectrometric properties.";
[17] Mass Spectrom. 34:1040-1054(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT MLD ILE-217.
MEDLINE-90147748; PubMed-2302219;
MEDLINE-90147748; PubMed-2302219;
MEDLINE-90147748; PubMed-2302219;
MEDLINE-90147748; PubMed-2302219;
MEDLINE-90147791 mit a point mutation in sphingolipid activator protein-1 mRNA in patients with a variant form of metachromatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kretz K.A., Carson G.S., Morimoto S., Kishimoto Y., Fluharty A.L.,
O'Brien J.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT MLD SER-241, SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Sulfatide activator protein. Alternative splicing that generates three mRNAs and a newly found mutation responsible for a clinical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gleselmann V., Zlotogora J., Harris A., Wenger D.A., Morris C.P.; "Molecular genetics of metachromatic leukodystrophy.";
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FUNCTION: Saposin B stimulates the hydrolysis of galacto-
FUNCTION: Saposin B stimulates the hydrolysis of galacto-
cerebroside sulfate by arylsulfatase A (EC 3.1.6.8), GM1
gangliosides by beta galactosidase (EC 3.2.1.23) and
gangliosides by beta galactosidase A (EC 3.2.1.22)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  globotriaosylceramide by alpha-galactosidase A (EC 3.2.1.22 Saposin B forms a solubilizing complex with the substrates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-91210267; PubMed-2019586;
Holtschmidt H., Sandhoff K., Kwon H.Y., Harzer K., Nakano T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Characterization of a mutation in a family with saposin
Stevens R.L., Fluharty C.B., Fluharty A.L.;
Structure of the asparagine-linked sugar chains of phinan urine cerebroside sulfate activator protein.";
J. Mass Spectrom. 35:1416-1424(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biochem. Biophys. Res. Commun. 166:1017-1023(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      deficiency: a glycosylation site defect.";
Proc. Natl. Acad. Sci. U.S.A. 87:2541-2544(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQÜENCE FROM N.A., AND VARIANT MLD ILE-217.
MEDLINE-90207231; Pubmed-2320574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biol. Chem. 266:7556-7560(1991).
                                                                                                                                                                                                                                                                   TISSUE-Urine;
MEDLINE-99441404; PubMed-10510427;
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MEDLINE-95170731; Pubmed-7866401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VARÍANT GAUCHER PHE-388.
MEDLINE-91285107; PubMed-2060627;
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TISSUE-Liver;
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CEREBROSIDE SULFATE BY ARYLSULFATASE A (EC 3.1.6.8), GM1
GANGLIOSIDES BY BETA-GALACTOSIDASE (EC 3.2.1.23) AMD
GLOBOTRIAOSYLCERAMIDE BY ALTHA-GALACTOSIDASE A (EC 3.2.1.22).
SAPOSIN B FORMS A SOLUBILIZING COMPLEX WITH THE SUBSTRATES OF THE
SPHINGOLIPID HYDROLASES (BY SIMILARITY).

-1- SUBGUIT: SAPOSIN D IS A PERCIFIC: SPHINGOMFELIN PHOSPHODIESTERASE
C -1- SUBGUIT: SAPOSIN D IS A HOMODIMER (BY SIMILARITY).

-1- SUBGUIT: SAPOSIN B IS A HOMODIMER (BY SIMILARITY).

-1- PTM: THIS PRECURSOR IS PROTEOLYTICALLY PROCESSED TO 4 SMALL
C PTM: THIS PRECURSOR IS PROTEOLYTICALLY PROCESSED TO 4 SMALL
C PTM: THIS PRECURSOR IS PROTEOLYTICALLY PROCESSED TO 4 SMALL
C PTM: THIS PRECURSOR IS PROTEONS (BY SIMILARITY).

-1- SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.

-1- SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Saposin." from bovine spleen; complete amino acid sequence and relation between the structure and its biological activity."; relation between the structure and its biological activity."; blochim. Biophys. Acta 1120:75-80(1992).

1. FUNCTION: THE LYSOSOMAL DEGRADATION OF SPHINGOLIPIDS TAKES PLACE BY THE SEQUENTIAL ACTION OF SPECIFIC HYDROLASES. SOME OF THESE EMINGOLIPIDS ACTIVATOR PROFILIS (BY SIMILARITY).

THE SPHINGOLIPIDS ACTIVATOR PROFILIS (COPROTEINS) (BY SIMILARITY).

1. FUNCTION: SAPOSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND GALACTOSYLCERAMIDE BY BETA-GALACTOSYLCERAMIDASE (EC 3.2.1.46).

SAPOSIN-C APPAREMTLY ACT'S BY COMBINING WITH THE ENZYME AND ACDIC LIPDID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
                                            Gaps
                                                                                                                                                                                  SAP_BOVIN STANDARD; PRT; 525 AA. P2679; ONR264; 01-AUG-1992 (Rel. 23, Created) 16-OCT-2001 (Rel. 40, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Proactivator polypeptide precursor (Contains: Saposin A (Protein A);
                                                                                                                                                                                                                                                                            Saposin B (Sphingolipid activator protein 1) (SAP-1) (cerebroside sulfate activator) (CSAct) (Dispersin) (Sulfatide/GM1 activator); Saposin C (Go-bet glucosidase) (Al activator) (Glucosylceramidase activator) (Sphingolipid activator protein 2) (SAP-2); Saposin D (Protein C) (Component C)].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Spleen;
MEDLINE-92207994; PubMed-1554743;
MEDLINE-92207994; FubMed-1554743;
Sano A., Mizuno T., Kondoh K., Hineno T., Ueno S.-I., Kakimoto Y.,
Morita N.,
                                                                                                                                                                                                                                                                                                                                                                            Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
NCBI_TaxID*9913;
             Length 524;
           Score 101; DB 1; Length 52
Pred. No. 1.1e-09;
0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Mammary gland;
Azuma N., Yoshida K.;
"RT-PCR cloning of bovine prosaposin ";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                           3 CEXCEXXXKEXXXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND VARIANTS.
         77.1%;
1larity 55.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 312-391.
        Query Match
Best Local Similarity
Matches 19; Conserv
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SAP_BOVIN
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use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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P20097;
01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Saposin C (CO-beta-glucosidase) (Glucosylceramidase activator)
Saposin C (GO-beta-glucosidase) (Glucosylceramidase activator)
Cavia porcellus (Guinea pig).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sphingolipid metabolism; Repeat.
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SAPOSIN B.
SAPOSIN B.
SAPOSIN B.
SAPOSIN D.
SAPOSIN D.
SAPOSIN LIKE TYPE A 1.
SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE A 2.
BY SIMILARITY.
B
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Pred. No. 2.3e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -> Q (IN REF. 2)
-> S (IN REF. 1)
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MQPK -> IRIR.
                                                                                                                                                                                              EMBL; AB036791; BAA95677.1; --
PIR; S21770; S21770; S21770;
InterPro; IPR0000119; SapA.
InterPro; IPR0000004; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 4.
SMART; SM00162; SAPB; 4.
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525 AA;
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Matches 16; Conserv
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Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.

- FUNCTION: THE LYSOSOMAL DEGRAPATION OF SPHINGOLIPIDS THESE
BY THE SEQUENTIAL ACTION OF SPECIFIC HYDROLASES. SOME OF THESE
ENZYMES REQUIRE SPECIFIC LOW-MOLECULAR MASS, NON-ENZYMIC PROFEINS:
THE SPHINGOLIPIDS ACTIVATOR PROTEINS (COPROFEINS) (BY SIMILARITY).
- FUNCTION: SAPOSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF
GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
GALACTOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
GALACTOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45).

SAPOSIN-C APPARERYLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC
LIPID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
THE SUBSTRATE (BY SIMILARITY).
                                              Bequence. F;
J. Biol. Chem. 263:19597-19601(1988).

J. Biol. Chem. 283:19597-19601(1988).

J. Biol. Chem. 28POSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND GALACTOSYLCERAMIDASE (EC 3.2.1.46).

SAPOSIN-C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC LIPID TO FORM AN ACITIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND SEQUENCE OF 194-203.
TISSUE-Brain, and Liver;
MEDLIKE-98129745; PubMed-9461526;
Azuma N., Seo H.-C., Lie O., Fu Q., Gould R.M., Hiraiwa M., Burt D.W.,
Paton I.R., Morrice D.R., O'Brien J.S., Kishimoto Y.;
"Cloning, expression and map assignment of chicken prosaposin.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                              Gaps
          Sano A., Radin N.S., Johnson L.L., Tarr G.E.; "The activator protein for glucosylceramide beta-glucosidase from guinea pig liver. Improved isolation method and complete amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Proactivator polypeptide precursor [Contains: Saposin A; Saposin
Saposin C; Saposin D].
                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                   Score 61; DB 1; Length 81;
Pred. No. 0.00084;
                                                                                                                                                                                                                                                                                                                                            16; Indels
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                                                                                                                                                                                                                                            N-LINKED (GLCNAC. BY SIMILARITY. BY SIMILARITY. BY SIMILARITY.
                                                                                                                                THE SUBSTRATE.
-:- SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
PIR; A32026; A32026.
                                                                                                                                                                                                                    Glycoprotein; Sphingolipid metabolism.

DOMAIN 1 81 SAPOSIN-LIKE TYPE
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                                                                                                                                                                                                                                                                                                                                                                   3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXC 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                       518 AA.
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6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
MEDLINE-89066787; PubMed-3198642;
                                                                                                                                                                                                                                                                                                                   46.6%;
1larity 31.2%;
Conservative
                                                                                                                                                                                                                                                                                           81 AA; 8852 MW;
                                                                                                                                                                   HSSP; P42210; 10DM.
InterPro; IPR000004; SapB.
ProDom; PD001732; SapB; 1.
SWART; SM00118; SAPB; 1.
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                                                                                                                                                                                                                                                                                                                                Local Similarity
nes 10; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID-9031;
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013035;
16-0CT-2001 (F
16-0CT-2001 (F
Proactivator p
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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CEREBROSIDE SULFATE BY ARYLSULFATASE A (EC 3.1.6.8), GMI
CANGLIOSIDES BY BETA-GALACTOSIDASE (EC 3.2.1.33) AND
GLOBOTRIAOSYLCERAMIDE BY ALPHA-GALACTOSIDASE A (EC 3.2.1.22).
SAPOSIN-B FORMS A SOLUBILIZING COMPLEX WITH THE SUBSTRATES OF THE
SPHINGOLIPID HYDROLASES (BY SIMILARITY).

-1- FUNCTION: SAPOSIN D IS A SPECIFIC SPHINGOWELIN PHOSPHODIESTERASE
ACTIVATOR (EC 3.1.4.12) (BY SIMILARITY).

-1- SUBGUIT: SAPOSIN D IS A HOMODIMER (BY SIMILARITY).

-1- SUBGUIT: SAPOSIN D IS A HOMODIMER (BY SIMILARITY).

-1- SUBGUIT: SAPOSIN B IS A HOMODIMER (BY SIMILARITY).

-1- PTM: THIS PRECURSOR IS PROTEDITIOLALLY PROCESSED TO 4 SMALL PTM: THIS PRECURSOR IS PROTEDITIOLALLY PROCESSED TO BEPTIDES, WHICH ARE SIMILAR TO EACH OTHER AND ARE SPHINGOLIPID HYDROLASE ACTIVATOR PROTEINS (BY SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.

-1- SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
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SWART; SM00118; SAPB; 4.
Signal; Glycoprotein; Lysosome; Sphingolipid metabolism; Repeat;
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E -> D (IN REF. 2).
B803000E891C3963 CRC64;
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SAPOSIN-LIKE TYPE B 1
SAPOSIN-LIKE TYPE B 2
SAPOSIN-LIKE TYPE B 3
SAPOSIN-LIKE TYPE B 4
SAPILARITY.
BY SIMILARITY.
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Pred. No. 0.015;
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SAPOSIN A.
SAPOSIN B.
SAPOSIN C.
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EMBL; AF108656; AAF05899.1; -.
InterPro; IPR000013119; SapA.
InterPro; IPR000004; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 4.
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ilarity 34.4%;
Conservative
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SIGNAL 1
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                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus. NCBL_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                       Morales C.R., EL-AIF, M., Zhao Q., Igdoura S.A.;
"Expression and tissue distribution of rat sulfated glycoprotein-1 (prosaposin).";
"Histochem. Cytochem. 44:327-337(1996).
-1- SUBCELLULAR LOCATION: Extracellular.
-1- SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.
-1- SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
                                                                                                                                                                                                                                                              TISSUE-Testis;
MEDLINE-96128541; PubMed-8573994;
Morales C.R., El-Alfy M., Zhao Q., Igdoura S.A.;
"Molecular role of sulfated glycoprotein-1 (SGP-1/prosaposin) in
                                                                                                                                                                                   Collard M.W., Sylvester S.R., Tsuruta J.K., Griswold M.D.; "Biosynthesis and molecular cloning of sulfated glycoprotein 1 secreted by rat Sertoll cells: sequence similarity with the 70-Kilodalton precursor to sulfatide/GMI activator."; Biochemistry 27:4557-4564(1988).
                     SAP_RAT STANDARD; PRT; 554 AA. p10960 (62841; 064190; 064190; 064190; 01-JUL-1989 (Rel. 11, Created) 01-JUL-1989 (Rel. 11, Last sequence update) 16-007-2001 (Rel. 40, Last annotation update) Sulfated glycoprotein 1 precursor (SGP-1) (Prosaposin). PSAP OR SGP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 3.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE A 2.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                  SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
TISSUE-Sertol1 cells;
MEDLINE-89000647; PubMed-3048385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Signal; Glycoprotein; Repeat.
1 16
17 554 SULFATED GL
                                                                                                                                                                                                                                                                                                                    Histol. Histopathol. 10:1023-1034(1995)
                                                                                                                                                                                                                                                                                                                                                   TISSUE-Testicle;
MEDLINE-96175245; PubMed-8601692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M19936; AAA42136.1; ---
EMBL; S81353; AAB36442.2; ---
EMBL; S81373; AAB36233.2; ---
PIR; A28716; A28716.
InterPro; IPR000004; SapB.
InterPro; IPR000004; SapB.
ProDom; PR00139; SapB.
ProDom; PR01732; SapB; 4.
SWART; SW00118; SAPB; 2.
SWART; SW00118; SAPB; 4.
                                                                                               norvegicus (Rat)
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274
274
3391
554
554
132
106
270
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                                                                                               Rattus
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RESULT 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-94272317; PubMed-8003952; Sprecher-Levy B., Orr-Urtreger A., Lonai P., Horowitz M.; Murine prosaposin: expression in the reproductive system of a gene implicated in human genetic disease."; Cell. Mol. Biol. 40:233-233(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus
                                                                                                                                                                                                                       (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                     (POTENTIAL)
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SEQUENCE FROM N.A.
MEDLINE-96084310; PubMed-8565332;
Cao Q.P., Crain W.R.;
Expression of SCP-1 mRNA in preimplantation mouse embryos.";
Dev. Genet. 17:263-271(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 46; DB 1; Length 554; Pred. No. 1.5;
BY SIMILARITY.
CICNAC. ..) (POTINED (GLCNAC. ..) (POTINED ...) (IN REF. 2).
I -> V (IN REF. 2).
I -> V (IN REF. 3).
W; DFE3F3A3A0520C6B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-BALB/c; TISSUE-Liver;
STRAIN-BALB/c; TISSUE-Liver;
Shao Q.Q., Bay N.N., Morales C.R.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLUIAR LOCATION: Extracellular.
-!- SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.
-!- SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SAP_MOUSE STANDARD; PRT; 557 AA. 6061207; 064219; 0640061; 15-DEC-1998 (Rel. 37, Last sequence update) 15-DEC-1998 (Rel. 37, Last sequence update) 16-007-2001 (Rel. 40, Last annotation update) Sulfated glycoprotein 1 precursor (SGP-1) (Prosaposin). PSAP OR SGP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tsuda M., Sakiyama T., Endo H., Kitaqawa T.;
"The primary structure of mouse saposin.";
Blochem. Blophys. Res. Commun. 184:1266-1272(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXC 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 CDICKTVVTEAGNLLKDNATEEEILHYLEKTC 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Liver;
MEDLINE-92272718; PubMed-1590788;
                                                                                                                                                                                                                                                                                                                                                                                                                  61123 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               35.1%;
25.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 25.0'
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse).
       [2]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-10090;
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PIB1_BOVIN
P10894;
                                                                                 PLCB1
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                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32.8%; Score 43; DB 1; Length 557; llarity 21.9%; Pred. No. 4.9; Conservative 6; Mismatches 19; Indels
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T (IN REF. 3).
L (IN REF. 3).
R (IN REF. 2 AND 3).
R (IN REF. 2).
                                                                                                                                                                       BY SIMILARITY.
SULEATED GLYCOROTEIN 1.
SAPOSIN-LIKE TYPE A 1.
SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 3.
SAPOSIN-LIKE TYPE B 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134593E20499E35E CRC64;
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N-LINKED (GLCNAC. . . ) (
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I -> V (IN REF. 2).
MISSING (IN REF. 2).
MS -> SA (IN REF. 2).
V -> L (IN REF. 2).
L -> W (IN REF. 2).
MISSING (IN REF. 2).
MISSING (IN REF. 2).
N -> D (IN REF. 2).
N -> D (IN REF. 2).
N -> D (IN REF. 2).
AL -> G (IN REF. 2).
AL -> G (IN REF. 2).
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                                                                               EMBL, U57999, AAB026951; -. MGD, MG197783, Pagap.
InterPro; IPR001119; SapA.
InterPro; IPR000004; SapA.
InterPro; IPR000004; SapB.
Probom; PR02199; SAPA; 2.
SMART; SM00162; SaPB; 4.
SMART; SM00118; SAPB; 4.
Sulfation; Signal; Glycoprotein; Resignal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61422 MW;
                                             445
448
557 AA;
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7; Conserva
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Best Local S:
Matches 7,
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                                01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
15-JUN-2002 (Rel. 11, Last annotation update)
15-JUN-2014 (Rel. 41, Last annotation update)
1-phosphatidylinositol-4, 2-bisphosphate phosphodiesterase beta 1
(EC 3.1.4.11) (FLC-beta-1) (Phospholipase C-beta-1) (PLC-154).
                                                                                                                                                                                                                                                                                                                                                                                  -I- FUNCTION: THE PRODUCTION OF THE SECOND MESSENGER MOLECULES
DIACYLGLYCEROL (DAG) AND INOSITOL 1,4,5-TRISPHOSPHATE (1P3) IS
MEDIATED BY ACTIVATED PHOSPHATIDYLINOSITOL-SPECIFIC PHOSPHOLIPASE
                                                                                                                                                                                                                                                                                       Katan M., Kriz R.W., Totty N., Philp R., Meldrum E., Aldape R.A., Knopf J.L., Parker P.J.;
"Determination of the primary structure of PLC-154 demonstrates diversity of phosphoinositide-specific phospholipase C activities."; Cell 54:171-177(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                  -i- CATALTIC ACTIVITY: 1-phosphatidyl-1D-myo-inositol 4,5-
bisphosphate + H(2)0 - D-myo-inositol 1,4,5-trisphosphate +
diacylglycarol.
-i- COFACTOR: Calcium.
-i- MISCELLANEOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1 IS
MEDIATED BY TWO G-PROTEIN ALPHA SUBUNITS, ALPHA-Q AND ALPHA-11.
-i- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS
OF PLC AND ARE ESSENTIAL FOR CATALTIC ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS50004; C2_DOMAIN_2; 1.
PROSITE; PS50007; PIPLC_X_DOMAIN; 1.
PROSITE; PS50008; PIPLC_X_DOMAIN; 1.
Hydrolase; Lipid degradation; Transducer; Phosphorylation; Calcium.
                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 43; DB 1; Length 1216; Pred. No. 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PHOSPHORYLATION (BY PKC).
MW; BEF809177F1B7ABB CRC64;
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DOMAIN Y.
C2 DOMAIN.
BY SIMILARITY.
BY SIMILARITY.
PRT; 1216 AA.
                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
MEDLINE-88270496; PubMed-2455601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; A28822; A28822.
HSSP; P10688; LDX.
InterPro; IPR000008; C2.
InterPro; IPR000192; PI_PLC.
InterPro; IPR000199; PI_PLC.
InterPro; IPR0001711; PI_PLC_Xdom.
Pfam; PF00168; C2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pfam; PF00387; PI-PLC-Y; 1. Pfam; PF003887; PI-PLC-X; 1. PRINTS; PR00389; PI-PLL-PASEC. ProDom; PD001202; PI-PLC-Y; 1. SMART; SM00239; C2; 1. SMART; SM00148; PLCXC; 1. SMART; SM00148; PLCXC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; J03137; AAA30702.1; -.
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 STANDARD;
                                                                                                                                                Bos taurus (Bovine).
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Best Local Similarity
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MOD_RES
SEQUENCE
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Gaps

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RESULT

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REQUENCE FROM N.A.

RA DEDLUNB-21638749; PubMed-11780052;

RA DEDLUNB-21638749; PubMed-11780052;

RA DEDLUNB-21638749; PubMed-11780052;

RA DONES M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,

RA Jones M., Stavrides G., Almeida J.P., Babbage A.K., Bagguley C.L.,

RA Bailey J., Barlow K.F., Bakey S.E., Bridgeman A.M., Brown A.J.,

RA Buck D., Burrill W.D., Butler R.B., Carder N.P.,

Chegg S., Cobley V.E., Coller R.E., Connor R.E., Carter N.P.,

RA Clegg S., Cobley V.E., Coller R.E., Connor R.E., Carter N.P.,

RA Clegg S., Cobley V.E., Coller R.E., Connor R.E., Carbon M.R.,

RA Coulson A., Carlfiths C., Griffiths M.N.D., Gwilliam R., Hall R.E.,

RA Huckle E., Hunt A.R., Heath P.D., Ho S., Holden J.L., Howden P.J.,

RA Huckle E., Hunt A.R., Hunt S.E., Jekosoh R., Johnson C.M., Johnson D.,

RA Kay M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,

Cloyer K., Parker A., Patel R., Pearce T.A.V., Peck A.I.,

RA Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,

RA Phillimore B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H.,

RA Skuce C.D., Smith M.L., Scoctt C.E., Sehra H.K., Shownkeen R., Sims S.,

RA Tracey A., Tromans A.C., Vaudin M., Walli M., Wallis J.M.,

RA Whitehead S.L., Whittaker P., Willey D.L., Thinlans L., Williams S.A.,

Whitthiang L., Wray P.W., Hubbard T., Durbin R.W., Bentley D.R., Beack S.,

RA Willang L., Wray P.W., Hubbard T., Durbin R.W., Bentley D.R.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peruzzi D., Calabrese G., Faenza I., Manzoli L., Matteucci A.;
Glanfrancesco F., Billi A.M., Stuppia L., Palka G., Cocco L.;
"Identification and chromosomal localisation by fluorescence in situ
hybridisation of human gene of phosphoinositide-specific phospholipase
                                                                                                                                                                                                                                                                            16-CCT-2001 (Rel. 40, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
1-JUNSPHAINGAILOJ-4, 2-blisphosphate phosphodiesterase beta 1
(EC 3.1.4.11) (PLC-beta-1) (Phospholipase C-beta-1) (PLC-154).
    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caricasole A., Sala C., Roncarati R., Formenti E., Terstappen G.C.; "Cloning and characterization of the human phosphoinositide-specific phospholipase C-beta 1 (PLCbetal)."; Biochim. Biophys. Acta 1517:63-72(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                           PIBI_HUMAN STANDARD; PRT; 1216 AA.
Q9NOĞ6; Q9NQ65; Q9NQH9; Q9NTH4; O60325; Q9H4H2; Q9BQW2; Q9UJP6;
Q9UM26;
    ő
11; Indels
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Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biochim. Biophys. Acta 1484:175-182(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOFORMS A AND B).
                                                                                           1059 EICEKEKKELKKKMDKKRQEK 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Brain;
MEDLINE-20225428; PubMed-10760467;
                                            4 EXCEXXXKEXXKXXDNNKXEK 24
  <del>;</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM A).
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The DNA sequence and cc
Nature 414:865-871(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                     PLCB1 OR KIAA0581.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Brain;
PubMed-11118617;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rissum-Testis;
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ID PIB1_HUMAN
  Matches
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                                                                                                                                                                                                         C2 DOMAIN.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
PHOSPHORYLATION (BY PKC) (BY SIMILARITY).
LQYBLECGYOKFKRLPLEILEFVORAMKGXISEDSNHGSA
PLSLSSDPGKVNHKTPSSEBLGGDIPGKEFDTPL. -> GEG
SSSFLSETCHEDPSVSPNFTPPNPQALKW (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -1- MISCELLANEOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1 IS MEDIATED BY TWO G-PROTEIN ALPHA SUBUNITS, ALPHA-Q AND ALPHA-11.
-1- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS OF PLC AND ARE ESSENTIAL FOR CAPALYTIC ACTIVITY.
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PROSITE; PS50007; PIPLC_X_DOMAIN; 1.
PROSITE; PS50008; PIPLC_X_DOMAIN; 1.
Hydrolase; Lipid degradation; Transducer; Phosphorylation; Calcium;
                                                                                                                     MEDLINE-98290545; PubMed-9628581;
Nagase T., Ishikawa K.-I., Miyajima N., Tanaka A., Kotani H.,
Nomura N., Ohara O.;
Koehrer K., Beyer A., Mewes H.-W., Gassenhuber J., Wiemann Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                              SEQUENCE OF 519-1216 FROM N.A. (ISOFORM A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN X. DOMAIN Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -1- SIMILARITY: CONTAINS 1 C2 DOMAIN.
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InterPro; IPR001192; PI_PLC.
InterPro; IPR001909; PI_PLC_Xdom.
InterPro; IPR001711; PI_PLC_Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AJ278313; CAB98142.1; -. EMBL; AJ278314; CAB98143.1; -.
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Pfam; PF00387; PI-PLC-Y; 3.
Pfam; PF00388; PI-PLC-X; 3.
PRINTS; PR00390; PHPHLIPASEC.
ProDom; PD001202; PI_PLC_Y; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL, AY004175, AAF86613.1)
EMBL, AL034081, CAC16181.1,
EMBL, AL050315, CAC34366.1,
EMBL, AL050315, CAB56498.1)
EMBL, AL045032, CAB46663.1,
EMBL, AL01153, BAA25507.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genew; HGNC:15917; PLCB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMART; SM00239; C2; 1.
SMART; SM00148; PLCXc; 1.
SMART; SM00149; PLCXc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HSSP; P10688; 1DJX.
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ACT_SITE
ACT_SITE
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VARSPLIC
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DOMAIN
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CBF5_YEAST
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diacylglycerol.
COFACTOR: Calcium.
SUBCELLULAR LOCATION: Cytosolic and particulate fractions.
TISSUE SPECIFICITY: Highest expression in brain. Also expressed in parotid gland, liver, uterus, lung, heart, adrenal gland and ovary. Not detected in spleen, pancreas, intestine, thymus or
           -> MGS
                                                                                                                                                                                                                                                                                   01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
15-JUN-2002 (Rel. 11, Last annotation update)
15-JUN-3002 (Rel. 41, Last annotation update)
1-phosphatidylinositol-4,2-bisphosphate phosphodiesterase beta 1
(EC 3.1.4.11) (PLC-beta-1) (Phospholipase C-beta-1) (PLC-1) (PLC-154).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Métazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -1- MISCELLANEOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1 IS MEDIATED BY TWO G-PROTEIN ALPHA SUBUNITS, ALPHA-Q AND ALPRA-11.
-1- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS OF PLC AND ARE ESSENTIAL FOR CATALYTIC ACTIVITY.
-1- SIMILARITY: CONTAINS 1 C2 DOMAIN.
                  LOGIATKILIRILSDALIRKETDLKS (IN REF. 2).
                                                                                                                                                                              Gaps
           AGGAQPGVHALQLKPVCVSDSLKKGTKFVKWDDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVITY, TISSUE SPECIFICITY, AND SUBCELLULAR LOCATION.
MEDLINE-93203266; PubMed-8454637;
Jhon D.-Y., Lee H.-H., Park D., Lee C.-W., Lee K.-H., Yoo O.J.,
Rhee S.G.;
                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE-88270495; PubMed-3390863;
Suh P.-G., Ryu S.H., Moon K.H., Suh H.W., Rhee S.G.;
"Cloning and sequence of multiple forms of phospholipase C.";
Cell 54:161-169(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATALYTIC ACTIVITY: 1-phosphatidyl-1D-myo-inositol 4,5-bisphosphate + H(2)O = D-myo-inositol 1,4,5-trisphosphate
                                                                                                                                                          DB 1; Length 1216;
                                                                                               > A (IN REF. 2).

> R (IN REF. 2).

** K (IN REF. 2).

** S (IN REF. 1; CAB98143).

6F4263D1A5OC6FD1 CRC64;
                                                                                                                                                                                                                                                                   1216 AA.
                                                                                                                                                                            1; Mismatches
                                                                                                                                                          Score 43;
Pred. No.
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                                                                                                                                                                                                                                                                  PRT;
                                       ۰
                                                                                                                                      MW;
                                                                                                                                                                                                4 EXCEXXXKEXXKXXDNNKXEK
                                                                                                                                                         32.8%;
                                                                                                                                      138566
                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat)
                                                                                                                                              Query Match
Best Local Similarity
9; Conserva
                                                                                                                                        Ä
                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10116;
                                                         221
266
309
320
352
366
393
983
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                                      CONFLICT
          CONFLICT
                            CONFLICT
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between the Swiss Institute of Bioinformatics and the EMBL outstation-
the European Bioinformatics Institute. There are no restrictions on its
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or send an email to license@lsb-sib.ch).
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01-FEB-1994 (Rel. 28, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Centromere/microtubule binding protein CBF5 (Centromere-binding factor 5) (Nucleolar protein CBF5) (F64').
CBF5 OR YER175W OR L9470.11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-S288C / AB972;
MEDLINE-97313267; PubMed-9169871;
MEDLINE-97313267; PubMed-9169871;
Benes V., Hillier L., Riles L., Albermann K., Andre B., Ansorge W., Benes V., Bruckner M., Delius H., Dubois E., Dusterhoft A., Bents K.D., Floeth M., Goffeau A., Hebling U., Heumann K., Heuss-Neitzel D., Hilbert H., Hilger F., Kleine K., Kotter P., Louis E.J., Messenguy F., Mewes H.-W., Miosga T., Mostl D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
MEDLINE-93330283: PubMed-8336724;
Jiang W., Middleton K., Yoon H.-J., Fouquet C., Carbon J.;
An essential yeast protein, CBFSp, binds in vitro to centromeres and microtibules ".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lipid degradation; Transducer; Phosphorylation; Calcium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saccharomyces cerevisiae (Baker's yeast).
Eukaryota: Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92F23691781F788E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C2 DOMAIN.
BY SIMILARITY.
BY SIMILARITY.
PHOSPHORYLATION (BY PKC)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS50004; C2_DOMAIN_2; 1.
PROSITE; PS50007; PIPLC_X_DOMAIN; 1.
PROSITE; PS50008; PIPLC_X_DOMAIN; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1059 EICEKEKKELKKKMDKKROEK 1079
                                                                                                                                                                                                                                        PIR; A28821; A28821.
HSSP; P10688; DDX.
InterPro; IPR000008; C2.
InterPro; IPR000192; PI_PLC.
InterPro; IPR000199; PI_PLC_Xdom.
InterPro; IPR000199; PI_PLC_Xdom.
Pfam; PF00168; C2; 1.
Pfam; PF00387; PT-PLC_Y; 1.
Pfam; PF00388; PT-PLC_Y; 1.
PRINTS; PR00390; PHPHLIPASEC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProDom; PD001202; FI_PLC_Y; 1. SWART; SW00239; C2; 1. SWART; SW00146; PLCXC; 1. SWART; SW00146; PLCXC; 1.
                                                                                                                                                                                                                EMBL; M20636; ALA41885.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32.8%;
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Best Local Similarity 42.9
Matches 9; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hydrolase;
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HSSP; P19995; 1PFO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Streptococcus.
NCBI_TaxID=119602;
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Q54114;
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SEQUENCE
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TACY_STREQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMEL outstation the Buropean Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
Mueller-Auer S., Nentwich U., Obermaier B., Piravandi E., Pohl T.M., Portetelle D., Purnelle B., Rechmann S., Rieger M., Rinke M., Rose M., Scharle M., Scherens B., Scholler P., Schwager C., Schwarz S., Underwood A.P., Urrestarazu L.A., Vandenbol M., Verhasselt P., Vierendeels F., Voet M., Volckaert G., Voss H., Wambutt R., Wedler H., Zimmermann F.K., Zollner A., Hani J., Hohelsel J.D.; "The nucleotide sequence of Saccharomyces cerevisiae chromosome XII.", Nature 387:97-90(1997).
                                                                                                                                                          -I-FUNCTION: BINDS IN VITRO TO CENTROMERES AND MICROTUBULES. IT IS A CENTROMERE DIA-CENTROMERE DIA MITOTIC CENTROMERE DIA-CENTROMERE DIA CENTROMERE DIA CHROMOSOME SEGREGATION. IT IS ESSENTIAL FOR CELL GROWTH. MAY BE IN SOME WAY ASSOCIATED WITH THE CBF3 110 Kba SUDBUNIT (CBF3A).
                                                                                                                                                                                                                                         -i- SUBCELLUIAR LOCATION: Nuclear; nucleolar.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D356B39FDCC32E2D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             al. 36, Last sequence update)
al. 36, Last annotation update)
precursor (Thiol-activated cytolysin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42; DB
Pred. No. 6.3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR004802; CDf5.
InterPro; IPR004802; CDf5.
InterPro; IPR004501; TruB.N.
InterPro; IPR004501; TruB.N.
Ffam; PF01472; PUA; 1.
Pfam; PF01472; PUA; 1.
SWART; SW00359; PUA; 1.
IGRRAMS; TIGR00425; 1.
TIGRFAMS; TIGR00425; 1.
Microtubules; Centromere; Repeat; Nucle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 KEXXKXXDNNKXEKEXXDXXDK 32
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5-JUL-1998 (Rel. 36, Last seqt
5-JUL-1998 (Rel. 36, Last anno
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40.9%;
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Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; S41853; S41853.
SGD; S0004165; CBF5.
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483 AA;
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NCBI_TaxID=1329;
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Q53957;
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REPEAT
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REPEAT
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TACY_STRCB
      RRAPARA
RRAPAR
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DNA Seq. 4:325-328(1994).
-!- FUNCTION: SULFHYDRYL-ACTIVATED TOXIN. IS ABLE TO LYSE CHOLESTEROL
-CONTAINING MEMBRANES. CAN BE REVERSIBLY INACTIVATED BY OXIDATION.
CHOLESTEROL IS THE RECEPTOR FOR THE BINDING OF THESE TOXINS TO
                        Okumura K., Hara A., Tanaka T., Nichiguchi I., Minamide W., Igarashi H., Yutsudo T.; Cloning and sequencing the streptolysin O genes of group C and group G streptococci...

G streptococci...

DNA Seq. 4:325-328(1994).

-I- FUNCTION: SULFHYDRYL-ACTIVATED TOXIN. IS ABLE TO LYSE CHOLESTEROL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okumura K., Hara A., Tanaka T., Nichiguchi I., Minamide W., Igarashi H., Yutsudo T.; "Clonning and sequencing the streptolysin O genes of group C and group
                                                                                                                                                                                                                         CONTAINING MEMBRANES. CAN BE REVERSIBLY INACTIVATED BY OXIDATION. CHOLESTEROL IS THE RECEPTOR FOR THE BINDING OF THESE TOXINS TO EUKARYOTIC CELL MEMBRANES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BY SIMILARITY.
STREPTOLYSIN O.
BINDING TO CHOLESTEROL (BY SIMILARITY).
C84D2036908329AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -:- SIMILARITY: BELONGS TO THE THIOL-ACTIVATED CYTOLYSIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Firmicutes; Lactobacillales; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
Streptolysin O precursor (Thiol-activated cytolysin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  574 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProDom; PD007062; Thiol_cytolysin; 1.
PROSITE; PS00481; THIOL_CYTOLYSINS; 1.
TOXIN; Hemolysis; Cytolysis; Signal.
SIGNAL 1 36
BY SIMILAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001869; Thiol_cytolysin. Pfam; PF01289; Thiol_cytolysin; 1. PRINTS; PR01400; TACYTOLYSIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 EXXXKEXXKXXDNNKXEKEXXD 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-95102113; PubMed-7803818;
MEDLINE-95102113; PubMed-7803818;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63911 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EUKARYOTIC CELL MEMBRANES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; D16825; BAA04105.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 32.1%;
Best Local Similarity 36.4%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptococcus equisimilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
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574 AA;
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Gaps

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Indels

12;

Mismatches

3,

Conservative

40.7%; Pred. No. 7.5;

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Best Local Similarity
Matches 11; Conserv
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YPT2_CAEEL
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There are no restrictions on
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"Characterization of signal-sequence-coding regions selected from the Bacillus subtilis chromosome.";
Gene 70:351-361(1988).
-1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY C40.
                                                                                                                                                                     nastrictus, transportus, transp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 42; DB 1; Length 574;
Pred. No. 7.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (APR-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF544B030E683038 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00877; NLPC_P60; 1.
Hypothetical protein; Complete proteome.
European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; 299121; CAB15485.1; --
EMBL; M22901, AAA22817.1; ALT_FRAME.
Subtilist; BG11023; yvc...
InterPro; IPR000064; NLPC_P60.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 EXXXKEXXKXXDNNKXEKEXXD 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-71 FROM N.A.
MEDLINE-89108019; PubMed-3145906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein yvcE (PSPA2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P40767; 006969;
01-FEB-1995 (Rel. 31, Created)
30-MAY-2000 (Rel. 39, Last sequ
15-UNN-2002 (Rel. 41, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             51033 MW;
                                                                                                                                    EMBL; D16824; BAA04104.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                      32.1%;
36.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; Z94043; CAB08053.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity 36.4
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                473 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus subtilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=1423;
                                                                                                                                                            HSSP; P19995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YVCE_BACSU
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
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SEQUENCE
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Matches
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Length 473;

DB 1;

Score 41.5;

31.78;

Query Match

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NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-S288c / AB972;
Lye G., Churcher C.M., Barrell B.G., Rajandream M.A., Walsh S.V.;
                                                                                                                                                                                                                                                                                                                Saccharomyces cerevisiae (Baker's yeast).
Eukaryota, Fungi, Ascomycota, Saccharomycotina, Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                   01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Hypothetical 60.1 kDa protein in SEC59-ERG5 intergenic region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-Bristol N2;
Fulton L., Waterston R.;
Submitted (FEB-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (MAY-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
Hypothetical 21.6 kDa protein F37A4.2 in chromosome III. F37A4.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Coiled coil.
6 COILED COIL (POTENTIAL).
0054 MW; 8142768058BFA264 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17;
                                                                                                                                                         519 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      189 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      464 EASRSREREDRRIEINNKKEKESASIGEE 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 EXCEXXXKEXXKXXDNNKXEKEXXDXXDK 32
                                          52 EAKEKELTELQENQSKIEKELKDINDK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No
7 EXXXKEXXXXDN-NKXEKEXXDXXDK
                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60054 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; 249211; CAA89115.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGD; S0004616; YMR014W.
Hypothetical protein; C
DOMAIN 426 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Caenorhabditis elegans.
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Best Local Similarity
-has 8; Conserve
                                                                                                                                                                                                                                                                                               KMR014W OR YM9711.01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE 519 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=4932;
                                                                                                                                                           YMP4_YEAST
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modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

EMBL; U00032; AAA50630.1; --
Normmep; F37A4.2; CE00710.

Hypothetical protein.

SEQUENCE 189 AA; 21602 MW; 8827BCC630A015D4 CRC64;
                                                                                                                                                                                                                      0; Gaps
                                                                                                                                                                          Query Match

29.8%; Score 39; DB 1; Length 189;
Best Local Similarity 36.4%; Pred. No. 8.3;
Matches 8; Conservative 3; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                    Search completed: June 2, 2003, 14:14:39 Job time: 9.32051 secs
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RESULT 2
Q9DG82
ID Q9DG82
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                                                                                             (without alignments)
315.131 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                             June 2, 2003, 14:14:14 ; Search time 24.8462 Seconds
                                                                                                                                                                                                                                                          671580
                                                                                                                                               131
1 XXCEXCEXXXKEXXXXXDNNKXEKEXXDXXDKXCXKXX 38
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                              671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                    OM protein - protein search, using sw model
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Q9DGH8
Q9Z0E5
Q9Z1B3
Q9YLS1
Q18276
Q9V8B1
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Q9QUG2
Q15997
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031976
095X03
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_human:*
sp_invertebrate:*
sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_vertebrate:*
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sp_phage:*
                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                              sp_archea:*
sp_bacteria:*
                                                                                                                                US-09-780-438C-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sp_rodent:*
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Match
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Perfect score:
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09bkm2 naegleria f 077337 plasmodium 088a28 orgza sativ 028489 archaeoglob 001803 pneumocysti 090557 caenorhabdi 08xm58 clostridium 094624 schizosacch 09bt47 homo sapien 09fk14 arabidopsis 099fk14 arabidopsis 090fk24 homo sapien 075760 homo sapien 075760 homo sapien 075761 homo sapien 075761 homo sapien 076405 homo sapien 076405 homo sapien 076405 homo sapien 076405 homo sapien 079733 saguiuus oe 08x167 escherichia 08x217 escherichiadii 091828 caenorhabdii 091099 arabidopsis	
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ALIGNMENTS

	520 AA.) quence update) notation update)	corrections of the corrections o	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Actinopterygii; Neopterygii; Teleostel; Ostariophysi; Cypriniformes; Cyprinidae: Danio.	•		Seo HC., Lie O., Fjose A., O'Brien J.S., Kishimoto Y.;	"Cloning, expression and promoter analysis of zebrafish prosaposin.";	Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.							F9E620F84BA41CB5 CRC64;	Score 45; DB 13; Length 520; Pred. No. 7.5; 2; Mismatches 21; Indels 0; Gaps	re Januar	*: -	AVEKVC 343
	PRT;	20, Created) 20, Last seg 21, Last app	hic fac	t; Cran	Teleos			0'Br16	moter a	EMBL/G6								Score 45; Pred. No. 2; Mismatc	I A D A D A A A		SEAEIV
	PRELIMINARY;	01-MAR-2002 (TrEMBLrel. 20, Created) 01-MAR-2002 (TrEMBLrel. 20, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)	Lysosomal cofactor/neurotrophic factor prosaposin. Brachydanic rerio (Zehrafish) (Zehra danio).	letazoa; Chordata	rii; Neopterygii; Danio.	,955;	M N.A.	te 0., Fjose A.,	pression and pro	UN-2000) to the	96; AAL54381.1;		R000004; Saps.	Piam; PrOZISS; SAPA; Z. Probom: PD001732: SapB: 3	62; SAPA; 2.	.18; SAPB; 4.	520 AA; 57431 MW;	34.4%; larity 28.1%; Conservative	YE DAMUKUNANNINAKARAKAGAKGU E		312 CAICEYVMKEIENMIODOTSEAEIVOAVEKVC 343
RESULT 1	8UV24 8UV24;	01-MAR-2002 01-MAR-2002 01-JUN-2002	Lysosomal co	Eukaryota; M	Actinopterygii; Ne Cyprinidae: Danio.	NCBI_TaxID=7955;	SEQUENCE FROM	Seo HC., L	"Cloning, ex	Submitted (J	EMBL; AF2769	InterPro; IPR003119;	InterPro; IPR000004;	Probom: PF02199; SAPA; Z. Probom: PD001732: SapB:	SMART; SM001	ŝ	SEQUENCE 5	Query Match Best Local Similarity Matches 9; Conserv	3 3		312 CAI
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01-MAR-2001 (TrEMBLrel. 16,
01-DEC-2001 (TrEMBLrel. 19,
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Matches 10; Conservative
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                                                                                                                                                                                                                                                                                                       Gallus.
NCBI_TaxID=9031;
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Q9DGH8
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MEDLINE-99376085; PubMed-10448855;
MEDLINE-99376085; PubMed-10448855;
MEDLINE-99376085; PubMed-10448855;
Medricher C.M., Craig A., Brown D., Chillingworth T., Gentles S., Gwilliam R., Hamlin N., Harris D., Holroyd S., Hornsby T., Gentles S., Gwilliam R., Hamlin N., Harris D., Holroyd S., Hornsby T., Murgall K., Murphy L., Oliver K., Quall M.A., Rajandream M.-A., Rutter S., Skelton J., Squares R., Squares S., Sulston J.E., Whitehead S., Woodward J.R., Newbold C., Barrell B.G., "The complete nucleotide sequence of chromosome 3 of Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                         Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Actinopterygil; Neopterygil; Teleostel; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
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Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
NCBL_TaxID=36329;
                                                                                                                                                                                                                                                                                                                  Altman N., Hornatz M.;

"The zebrafish prosaposin cDNA.";
Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AF108655; AAG32319.1;
ZFIN; ZDB-GENE-020108-1; psap.
InterPro; IPR003119; SapB.
InterPro; IPR000109; SapB.
Pfam; PF01199; SAPB; 2.
Probom; PF001132; SaPB; 3.
SMART; SM00162; SAPB; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34.4%; Score 45; DB 13; Length 522; 28.1%; Pred. No. 7.5; Live 2; Mismatches 21; Indels
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SEQUENCE 1334 AA; 160847 MW; E3577E84C7E0C8E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  522 AA; 57671 MW; D3C15A305725C1CD CRC64;
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01-MAY-1999 (TrEMBLrel. 10, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Hypothetical 160.8 kba protein.
                    01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               314 CAICEYVMKEIENMIQDQTSEAEIVQAVEKVC 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXC 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1334 AA.
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Nature 400:532-538(1999).
EMBL; AL034559; CAB39073.2; -.
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                                                                                                  Prosaposin.
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01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
101-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Fas ligand receptor soluble form (Fragment).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bridgham J.T., Johnson A.L.;
Fras Expression and Regulation in Hen Granulosa Cells.";
"Fas Expression and Regulation in Hen Granulosa Cells.";
Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF296875; AAG02243.1; -.
HSSP; O14763; 1D4V.
InterPro: IPR001488; Death.
InterPro: IPR001368; TNFR_C6.
Pfam; PF00051; Geath; 1.
Pfam; PF00051; URFR_C6; 2.
SMART; SM00206; UBATH; 1.
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"Fas Expression and Regulation in Hen Granulosa Cells.";
Submitted (AdG-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF296874; AAG02242.1;
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SEQUENCE 285 AA; 32431 MW; A9761960CCD79E6D CRC64;
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Last sequence update)
Last annotation update)
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285 AA.
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InterPro; IPR001688; Death.
InterPro; IPR001688; TNFR_c6.
Pfam; PF00531; death; 1.
Pfam; PF00020; TNFR_c6; 2.
SMART; SM0005; DEATH; 1.
SMART; SM00050; DEATH; 1.
PROSITE; PS50017; DEATH_DOMAIN; 1.
PROSITE; PS50050; TNFR_NGFR_1; UNKNOWN_1.
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PROSITE; PS00652; THFR_NGFR_1; UNKNOWN_1.
PROSITE; PS50050; THFR_NGFR_2; 2.
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Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID=10090;
    01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
                                          Phospholipase C-beta-la.
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SEQUENCE FROM N.A.
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Q9YLS1;
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      DOR REPORT OF THE PROPERTY OF 
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                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID-10090;
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                                                             Length 312;
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PROSITE; PS50007; PIPLC_X_DOMAIN; 1.
PROSITE; PS50008; PIPLC_X_DOMAIN; 1.
SEQUENCE 1173 AA; 133255 WW; D2F5F00BE9785FFC CRC64;
                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wu K., Bai J., Marks D.L., Pagano R.E.;
Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases
  1
312 Aa; 35275 NW; 5496BCF1E4CE676C CRC64;
                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
                                                           Score 43.5; DB 13;
Pred. No. 8.7;
2; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 11;
                                                                                                                                                              1; Mismatches
                                                                                                                                    3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXC 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1216 AA.
                                                                                                                                                                                                                                                                            PRT; 1173 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32.8%; Score 43; 42.9%; Pred. No.
                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .Q9Z1B3;
01-MAY-1999 (TrEMBLrel. 10, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1059 EICEKEKKELKKKMDKKRQEK 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGD; MGI:97613; Plcbl.
InterPro; IPR000008; C2.
InterPro; IPR001192; PL_PLC.
InterPro; IPR000909; PL_PLC_Xdom.
InterPro; IPR001711; PL_PLC_Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 EXCEXXXKEXXKXXDNNKXEK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00188; C2; 1.
Pfam; PF00188; PI-PLC-X; 1.
Pfam; PF001381; PI-PLC-X; 1.
PRINTS; PR001390; PHPHLIPASEC.
ProDom; PD001202; PI_PLC_Y; 1.
SMART; SM00129; C2; 1.
SMART; SM00148; PLCX; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U85714; AAD00573.1; -. U85713; AAD00572.1; -. P10688; 1DJX.
                                                         Query Match 33.2%;
Best Local Similarity 31.2%;
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                             01-MAY-1999 (TrEMBLrel. 10, 0
01-MAY-1999 (TrEMBLrel. 10, 1
01-UNN-2002 (TrEMBLrel. 21, 1
Phospholipase C-beta-1B'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 42.97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN-SWISS 3T3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-SWISS 3T3
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .soform.
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                                                                                                                                                                                                                                                                          Q920E5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                    RESULT 6
Q9Z0E5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 7
Q9Z1B3
ID Q9Z11
AC .Q9Z11
DT 01-M
SO
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Gaps
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"Use of restriction fragment analysis and sequencing of a serotype-specific region to type adenovirus isolates.";

EMBL; AF051949; AAD18129.1;

HSSP; P03277; 1DHX.

HSSP; P03277; 1DHX.

ProDom; PD002815; Adeno_hexon.

ProDom; PD002815; Adeno_hexon; 1.

ProDom; PD002815; Adeno_hexon; 1.

NON_TER 1 1 1

NON_TER 52 52

SEQUENCE 52 AA; 5776 MW; CA787840339C61DC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human adenovirus type 5.
Viruses; dsDNA viruses, no RNA stage; Adenoviridae; Mastadenovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 32.8%; Score 43; DB 11; Length 1216; Best Local Similarity 42.9%; Pred. No. 34; Matches 9; Conservative 1; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42; DB 12; Length 52;
Pred. No. 3.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS50004; C2_DOMAIN_2; 1.
PROSITE; PS50007; PIPIC_X_DOMAIN; 1.
PROSITE; PS50008; PIPIC_X_DOMAIN; 1.
SEQUENCE 1216 AA; 138324 MW; D873078AS8CE824D CRC64;
STRAIN-SWISS 3T3;
Wu K., Bai J., Marks D.L., Pagano R.E.;
Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
EMBL: UB5712; AAD00571.1; -.
HSSP: P10688; 1DJX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MGD; MICHOFO, 100.

InterPro; IPR001009; C2.

InterPro; IPR001192; PL_PLC.

InterPro; IPR001192; PL_PLC.

InterPro; IPR001192; PL_PLC_Xdom.

InterPro; IPR001191; PL_PLC_X.

Pfam; PF00168; C2; 1.

Pfam; PF00188; PI-PLC_Y; 1.

PRINTS; PR00390; PHPHLIPASEC.

PRODOM; PD001209; PI-PLC_Y; 1.

SMART; SM00149; PLCXC; 1.

SMART; SM00149; PLCXC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 EXCEXXXKEXXXXDNNKXEK 24
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34.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hexon protein (Fragment)
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Matches

ŝ a RESULT 9 Q18276

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RADILINE-LUJOUOUG, FURNEWG-ILV11121,
RA MADILINE-LUJOUOUG, FURNEWG-ILV11121,
RA MADILINE-LUJOUOUG, FURNEWG-ILV11121,
RA MADILINE-LUJOUOUG, GALGER S.E., HICHER, H. HOSHIRR R.A., GABLE R.F.,
George R.A., Lewis S.E., Hichards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell N.D., Zhang O., Chen L.X.,
RA Brandon G.G., Mortman J.R., Yandell N.D., Zhang O., Chen L.X.,
RA Wan K.H., Doyle C., Barker E.G., Helt G., Nelson C.R. Miklos G.L.G.,
RA Abril J.F., Agbayni A., An H.J., Andrews-Fehmikoh C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beaslay E.M.,
RA Bescon K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Berkow D., Botcher A., Deng Z., Banghard J., Dew I., Dietz S.M.,
Rockery J., Carlell J., Bayraktaroglu L., Dietz S.M.,
Ra Borkow B.C., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
Rodson K., Doup L.E., Downes M., Dugan-Rochas S., Dunkov B.C., Dunn P.,
RA Grarry J.M., Cawley S., Dahner C., Gabrielian A.E., Garg K.S., Gelbart R.M., Glasser K.,
RA Godek K., Gong F., Gorrell J.H., Guz J., Gans R.K.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Marvey D., Melman T.J., Melman T.J., Melman T.J., Melman B.E.,
RA Liu X., Mattel B., Molrosh T.C., Moriesod M.P., Morby D., Lai Z.,
Lasko P., Lei Y., Leittsky A.A., Li J.Y., Mazy D.M., Nelson D.L.,
RA Merkulov G., Milshina N.V., Mobarry C., Morieso J.A., Parle B.,
RA Blazzolo M., Pittman G.S., Pand S., Pollard J., Pull Y., Realert K., Remington K.A., Sauders R.D.C., Scheeler F., Shen H.,
Ray R. R., Kodling A.C., Stapleton M., Skupski M.P., Smith T.,
Spier E., Spradling A.C., Stapleton M., Stupski M.P., Smith T.,
Ray R. R., Kondage T., Worley K.G., Wu D., Yang G., Zhan Q., Zhao G., Zhao 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Januarian C., Kimoto H., Taketo Y., Taketo A.; "Mutational Analysis of Streptolysin O, an Oxygn-labile Streptococcal Hemolysin." Submitted (OCT-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AB050249; BAB41211.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Firmicutes; Bacillus/Clostridium group; Lactobacillales; Streptococcaceae; Streptococcus. NCBL_TaxID=119602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32.1%; Score 42; DB 5; Length 359; 30.8%; Pred. No. 18; ive 4; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             574 AA.
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01-JUN-2001 (TrEMBLrel. 17, Last sequ
01-DEC-2001 (TrEMBLrel. 19, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
  MEDLINE-20196006; PubMed-10731132;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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Rest Local Similarity
8; Conserve
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-H46A;
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Pterygota, Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila,
NCBI_TaxID=7227;
  Gaps
                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID=6239;
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  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genome sequence of the nematode C. elegans: a platform for investigating blology. The C. elegans Sequencing Consortium."; Science 282:2012-2018(1998).
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14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Miller N.;
"The sequence of C. elegans cosmid C28C12.";
Submitted (NOV-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Direct Submission.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; U40797; AAB37550.2; -.
InterProx: IPRO00004; SapB.
ProDom; PD001732; SapB; 1.
SWART; SM00118; SAPB; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               il protein.
238 AA; 27290 MW; 828EF6D21EA03866 CRC64;
                                                                                                                                                                                                       Q18276;
01-NVV-1996 (TrEMBLrel. 01, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
11-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Hypothetical 27.3 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                      238 AA.
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3; Mismatches
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5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 EXXXKEXXKXXDNNKXEKEXXDXXDK 32
                                                                 | | | : || ||: : || ETLAKIKPEAGEENKWEKDATEFSDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 CEXCEXXXKEXXKXXDNNKXEKEXXD 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                        PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13,
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 26.9 hes 7; Conservative
                                                                                                                                                                                   PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Waterston R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9V8B1;
                                                                                                                                                                                   918276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CG10911
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Gaps

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Matches

ŏ g RESULT 10 09V8B3

Gaps

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us-09-780-438c-6.rspt

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"Human and mouse homologs of Escherichia coli DinB (DNA polymerase IV), members of the Umuc/DinB superfamily.";
Proc. Natl. Acad. Sci. U.S.A. 96:11922-11927(1999).
                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-99449784; PubMed-10518552;
Gerlach V.L., Aravind L., Gotway G., Schultz R.A., Koonin E.V.,
Friedberg E.C.;
                                                                                                               32.1%; Score 42; DB 2; Length 574; 36.4%; Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-BALB/C; TISSUE-TESTIS;
Ogi T., Kato T.Jr., Kato T., Ohmori H.;
"Mutation enhancement by DINB1, a mammalian homologue of
Escherichia coli mutagenesis protein DinB.";
Genes Cells 0:0-0(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ogi T., Ohomori H.;
"Mouse DNA polymerase kappa gene, exon14-15...;
Suhmitted (MAR-2000) to the EMBL/GenBank/DDBJ databases
          InterPro; IPR001869; Thiol_cytolysin.
Pfam; PF01289; Thiol_cytolysin; 1.
PRINTS; PR01400; TACTFOLYSIN; 1.
PRODONOS; THIOL_CYTOLYSIN; 1.
PROSITE; PS00481; THIOL_CYTOLYSINS; 1.
SEQUENCE 574 AA; 64026 MW; 8336FEEBDENASCFC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96002 MW; FD8F33A6E78992F4 CRC64;
                                                                                                                                                                                                                                                                                                                01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-MAR-2002 (TrEMBLrel. 20, Last annotation update) DINBI (DNA polymerase kappa).
                                                                                                                                                                                                                                                                      852 AA
                                                                                                                           Local Similarity 36.4%; Pred. No. 27; les 8; Conservative 3; Mismatches
                                                                                                                                                                                                                                                                                               01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequ
01-MAR-2002 (TrEMBLrel. 20, Last ann
                                                                                                                                                                                       ESAEKEEKKSEDNKKSEEDHTE 110
                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                    7 EXXXKEXXKXXDNNKXEKEXXD 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BAB59059.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BAB59059.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAB59059.1; JOINED
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                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MGD; MGI:1349767; Polk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IPR001126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. Oqi T., Ohomori H.;
HSSP; P19995; 1PFO
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF163571;
                                                                                                                                                                                                                                                                                                                                                        POLK OR DINB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nterPro;
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                                                                                                               Query Match
                                                                                                                                                                                                                                                                     0900G2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
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                                                                                                                               Best Loc
Matches
                                                                                                                                                                                                                                          RESULT 12
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Gaps
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Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
Bombycoidea; Bombycidae; Bombyx.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The complete nucleotide sequence of the Bacillus subtilis SPbetac2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses; dsDNA viruses, no RNA stage; Caudovirales; Siphoviridae.
NCBL_TaxID=66797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE-98278844; PubMed-9611271; MEDLINE-98278844; PubMed-9611271; Tambunan J., Chang P. K., Li H., Natori M.; Molecular cloning of a cDNA encoding a silkworm protein which contains the conserved BH regions of Bcl-2 family proteins."; Gene 212:287-293(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Lazarevic V., Duesterhoeft A., Soldo B., Hilbert H., Mauel C.,
Karamata D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2285;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32.1%; Score 42; DB 5; Length 965; 25.0%; Pred. No. 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                prophage.";
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; AF020713; AAC13005.1; -.
HSSP; P07018; 153L.
InterPro; IPR002886; Peptidase_M37.
InterPro; IPR00189; SLT_domain.
Pfam; PF01461; SLT; 1.
Pfam; PF01464; SLT; 1.
PROSITE; PS00922; TRANSGLYCOSYLASE; 1.
SEQUENCE 2285 AA; 252310 MW; FF602C227754B357 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         965 AA; 108825 MW; F41A7BEE7F626078 CRC64;
                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXC 34
                                                                                                                                                                                               965 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Mismatches
                                                                                                                                                                                                                                                           Created)
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                                                                                                                                                                                                     PRT;
                                :||: ::| | || |
715 ENNRSKEECPDIPDKSC 731
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InterPro; IPR003119; SapA.
InterPro; IPR000104; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 6.
SWART; SW00162; SAPA; 7.
34
                                                                                                                                                                                                                                                     01-JAN-1998 (TrEMBLrel. 05, 01-JAN-1998 (TrEMBLrel. 05, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-1998 (TrEMBLrel. 07, 01-AUG-1998 (TrEMBLrel. 07, 01-JUN-2002 (TrEMBLrel. 21, Putative transglycosylase.
DNNKXEKEXXDXXDKXC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8; Conservative
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                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                       Bombyx mori (Silk moth)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteriophage SPBc2
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18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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015997
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064046
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6; Indels

Similarity 41.2%; Pred. No. 37; 7; Conservative 4; Mismatches 6

Best Local Similarity Matches 7; Conserv

Query Match

Length 852;

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Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S.,
Azevedo V., Bertero M.G., Bessieres P., Bolotin A., Borchert S.,
Bursisa K., Bourster L., Brans A., Braun M., Briggell S.C., Bron S.,
Bruschi C., Bruschi C.V., Caldwell B., Capuano V., Carter N.M.,
Brouillet S., Bruschi C.V., Connerton I.F., Cummings N.J., Daniel R.A.,
Brois S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
Brian K.D., Errington J., Fabret C., Feriari E., Foulger D.,
Brian K.D., Errington J., Fabret C., Feriari E., Foulger D.,
Find S.W., Glaser P., Goffeau A., Golightly E.J., Grandl G.,
Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
Hibert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L.,
All R. A., Maramata D., Kasahara Y., Klaerr Blanchard M., Klein C.,
Robyashi Y., Koetter P., Koningstein G., Krogh S., Kumano M.,
Kurita K., Lewine A., Liu H., Masuda S., Mauel C., Medigue C.,
A. Medina N., Mellado R.P., Mizuno M., Moestl D., Nakai S., Noback M.,
Robor D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H.,
Parro V., Pohl T.W., Portecelle D., Porwollik S., Prescott A.M.,
Prescan E., Pujic P., Purnelle B., Ropoport G., Rey M., Reynolds S.,
Schlouch J., Schole E., Roche B., Rose M., Sadaie Y.,
A. Setiguchi J., Sckowska A., Seror S.J., Serror P., Shin B.S.,
Sorokin A., Tamakoshi H., Tanaka T., Takahashi H., Takemutu K.,
Winters P., Wipat A., Yamamoto H., Yamane K., Yosamoto K., Yata K.,
Winters P., Wipat A., Yamamoto H., Yamane R., Yoshikawa H., Danchin A.,
Rustins S., Woller E., Wedler E., Wedler E., Wedler E., Wedler E., Weller E., 
                        Gaps
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                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Firmicutes; Bacillus/Clostridium group; Bacillales; Bacillaceae; Bacillus.
NCBI_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 42; DB 16; Length 2285;
Pred. No. 87;
                      15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kunst F., Ogasawara N., Yoshikawa H., Danchin A.;
Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2285 AA; 252310 MW; FF602C227754B357 CRC64;
                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                   PRT; 2285 AA.
  38.5%; Pred. No. 87; tive 1; Mismatches
                                                                                                         881 EDASKEIKKSKDELKOYKQIADYNDK 906
                                                               7 EXXXKEXXKXXDNNKXEKEXXDXXDK 32
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PROSITE; PS00922; TRANSGLYCOSYLASE; 1.
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HSSP, P00718; 1531.

InterPro; IPR002886; Peptidase_M37.

InterPro; IPR001896; Str. domain.

Pfam; PF01551; Peptidase_M37; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-168;
MEDLINE-98044033; PubMed-9384377;
                                                                                                                                                                                                                                                          01-JAN-1998 (TrEMBLrel. 05, 01-JAN-1998 (TrEMBLrel. 05, 01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32.1%;
38.5%;
Best Local Similarity 38.59
Matches 10; Conservative
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                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                        Bacillus subtilis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                YOMI protein.
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031976
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Search completed: June 2, 2003, 14:17:19 Job time: 27.3462 secs

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Query Match

77.1%; Score 101; DB 1; Length 80;
Best Local Similarity 55.9%; Pred. No. 2.2e-10;
Matches 19; Conservative 0; Mismatches 15; Indels
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; ANTI-SENSE: NO
; FRAGMENT TYPE: int.
; IMMEDIATE SOURCE:
; CLONE: SAPOSIN C
US-08-100-247-3
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                                                                                                                                                                                                                                    June 2, 2003, 14:14:43; Search time 11.6923 Seconds (without alignments) 95.624 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/PcTUS_COMB.pep:*
GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
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US-08-44-594A-4
US-08-40-247-2
US-08-10-247-2
US-08-10-247-2
US-08-232-513A-3
US-08-232-513A-1
US-08-483-146A-1
US-08-483-146A-1
US-08-484-594A-1
US-08-611-307-1
US-08-611-307-8
US-08-611-307-8
US-08-611-307-8
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Match Length DB
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Perfect score:
Sequence:
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Maximum DB :
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ਰਕਰਕਰਰਰਰਰਰ ਜਜਜਰਰਰ		T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1
11111111111111111111111111111111111111		ULT 1 dequence 3, Application US/081 atent No. 5571787 GENERAL INFORMATION: APPLICANT: O'BRIEN, JOHN S APPLICANT: RISHIMOTO, YASU TITLE OF INVENTION: NUMBER OF SEQUENCES: 5 CORRESPONDENCE ADDRESS: ADDRESSEE: KNOBBE, MARTE STREET: 620 NEWPORT CENT CITY: NEWPORT BEACH STATE: CA COUNTRY: USA ZIP: 92660 COMPUTER FRADABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: Patentin Relea COMPUTER: Patentin Relea COMPUTER: IBM PC COMPATION OFFRATING SYSTEM: PC-DOS SOFTWARE: Patentin Relea CURRENT APPLICATION DATA: FILING DATE: 19930730 CLASSIFICATION: 514 ATTORNEY/AGENT INFORMATION: NAME: ISTAELSEN, NEG A. REGISTRATION TOWBER: 29, REFERENCE/DOCKET NUMBER: 27 RELECOMMUTICATION INFORMATION: TELECOMMUTICATION INFORMATION: TELECOMMUTICATION INFORMATION: TELECOMMUTICATION THORMATION: TELECOMMUTICATION THORMATION: TELECOMMUTICATION THORMATICS: LENGTH 80 amino acids STRANDEDNESS: SINGLE TOPOLOGY: linear MUNICATION OFFRATION TYPE: ADDRESS MUNICATION OFFRATION TYPE: ADDRESS STRANDEDNESS: SINGLE TOPOLOGY: Linear
22 22 24 26 26 26 26 26 26 26 26 26 26 26 26 26		T 1 100-247-3 uence 3, Application US/ ent No. 5571787 RERAL INFORMATION: APPLICANT: KISHIMOTO, Y CUTY: NEWPORT BEACH STAFE: CA COUNTRY: USA ZIP: 92660 COMPUTER: READABLE FORM: MEDIUM TYPE: CIPOPY COMPUTER: BEACH STAFE: PATENTIN PCOMP OOMPUTER: IBM PC COMP OOMPUTER: IBM PC COMP OOMPUTER: BEACH COMPUTER: BATENTIN PC CITY: NUMBER: PATENTIN STAFE: D APPLICATION NUMBER: USA APPLICATION NUMBER: ISA APPLICATION NUMBER: ISA APPLICATION NUMBER: ISA APPLICATION NUMBER: ISA APPLICATION NUMBER: G FELEPAN: G19-235-0176 FELEPAN: G19-235-0176 TELEPAN: G19-235-0176 TYPE: anino acid TYPE: anino acid TYPE: anino acid TYPE: ADDICATION CONTINENTINENTINENTINENTINENTINENTINENTIN
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		100-247- Ince 3, t No. 5; FALCANT PPLICANT PPLICANT PPLICANT THE OF RRESPON RR
		SULT 1 Sequence 3, A APPLICANT: TITLE OF NUMBER OF CORRESPON CORRESPON CORRESPON CONTY: CITY: APPLICAN STREET: COUNTY: COMPUTER
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Sequence 3, Application US/08484594A

Sequence 3, Application US/08484594A

Patent No. 5714459

GENERAL INFORMATION:
APPLICANT: C'Brien, John S.
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: G20 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
STREET: CANTE: CANTER 
                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING DATE: 21-APR-1994
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Carlyn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1643
TELECOMMUNICATION INFORMATION:
   4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATE:
APPLICATION TOWNER: US/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
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55.9%; Pred. No. 2.2e-10;
tive 0; Mismatches 15
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; LOCATION: 1..80
; OTHER INFORMATION: /label= Saposin_C
US-08-232-513A-4
                                                                                                                                                                                                                                     COMPUTER: IBN PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPAONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 55.99
Matches 19; Conservative
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                                     CITY: San Diego
STATE: California
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                                                                 STATE: CCOUNTRY: ZIP: 921
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                                                                                                                                                                                                                                                                                                                          APPLICANT: O'Brien, John S.
APPLICANT: SISHIMOLO, Yasuo
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: COMPRISING PROSAPOSIN AND NEUROTROPHIC PEPTIDES DERIVED
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
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Patent No. 5700909
GENERAL INFORMATION:
APPLICANT: O'BTIEN, John S.
TITLE OF INVENTION: Prosaposin and Cytokine-Derived Peptides
TITLE OF INVENTION: as Therapeutic Agents
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 101; DB 1; Length 80;
Pred. No. 2.2e-10;
0; Mismatches 15; Indels
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                                     3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: Is Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Campbell & Flores LLP
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Patent No. 5696080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: 18rad1sen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYEL
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEPHONE: 619-235-8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 77.1%;
Best Local Similarity 55.9%;
Matches 19; Conservative (
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SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
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STRANDEDNESS: single
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                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: CA
COUNTRY: USA
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Length 80; Indels Length 523;

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Score 101; DB 1;
Pred. No. 1.4e-09;
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APPLICATION NUMBER: US/08/483,146A FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                             Sequence 2, Application US/08483146A Patent No. 5696080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYEL
TELECOMMUNICATION:
TELEPHONE: 619-235-850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
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55.98;
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Best Local Similarity 55.9%;
Matches 19; Conservative (
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amino acid
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                                        Best Local Similarity 55.9
Matches 19; Conservative
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INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 620 Newport
CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: O'BRIEN, JOHN S.
APPLICANT: KISHIMOTO, YASUO
TILLE OF INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
CITY: NEWPORT BEACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DARA:
APPLICATION NUMBER: US/08/100,247
FILING DATE: 19930730
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
                                                                               MYELOS, 002DV2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: 1sraelsen, Ned A.
REGISTATION UNDABER: 29,655
REFERENCE/DOCKET UNDABER: OBRIF
TELECOMMUNICATION INFORMATION:
TELEFAX: 619-235-6176
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: ISTRESON, Ned A
REGISTRATION NUMBER: 29 655
REFERENCE/DOCKET NUMBER: MYELG
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEPHONE: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08100247 Patent No. 5571787
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 55.9%;
Matches 19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 523 amino acids TYPE: amino acid
                                                                                                                                               TELEX:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 80 amin acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: protein
FRAGMENT TYPE: internal
                                                                                                                                                                                                                             TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMEDIATE SOURCE:
CLONE: PROSAPOSIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: NEWPO
STATE: CA
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92660
                                                                                                                                                                                                                                                                                                                        US-08-484-594A-3
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GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
APPLICANT: Nishimcto, Yasuo
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: THEREFROM
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
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  Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 523;
Indels
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Pred. No. 1.4e-09; 0; Mismatches 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: Knobbe, Martens, Olson and Bear
620 Newport Center Blvd. 16th Floor
                                       3 CEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXK 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: TBM Compatible
SUPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/08232513A Patent No. 5700900 GENERAL INFORMATION: GAPPLICANT: O'Brien, John S.
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Length 523;
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APPLICANT: O'BRIEN, JOHN S.
APPLICANT: RISHIBMO, YASUO
TITLE OF INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
CURRENT APPLICATION DATA:
APPLICATION UNBER:
FILING DATE: 19930730
CLASSIFICATION: 514
ATTORNEY/AGENT IRRORMATION:
NAME: 181aelsen, Ned A.
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: 0BRIEN.002A
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION INF
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Pred. No. 1.4e-09;
0; Mismatches 15;
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                      FILING DATE: 07-UN-1995
CLASSIFICATION: 514
PRIOR APPLICATION 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATTOKNEY/AGENT INFORMATION:
NAME: ISRAELSEN, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYELOS.002DV2
TELECOMMUNICATION INFORMATION:
TELECHONE: 619-235-8550
TELEFRAX: 619-235-0176
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08100247 Patent No. 5571787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 55.9%;
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: peptide HYPOTHETICAL: NO
       APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-484-594A-2
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Sequence 2, Application US/08484594A

Batent No. 5714459

GENERAL INFORMATION:
APPLICANT: V.STIGNICO, YASUO
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
STREET: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
TITLE OF INVENTION: Prosaposin and Cytokine-Derived Peptides TITLE OF INVENTION: as Therapeutic Agents
INTRES OF SEQUENCES: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 77.1%; Score 101; DB 1; Length 523; Best Local Similarity 55.9%; Pred. No. 1.4e-09; Matches 19; Conservative 0; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                          CAPPUTER PAILLY
CAPPUTER PAILLY
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/23.513A
FILING DATE: 13-APR-1994
PRIOR APPLICATION NUMBER: US/08/23.513A
FILING DATE: 30-JUL-1993
APPLICATION NUMBER: US/08/100.247
FILING DATE: 30-JUL-1993
APPLICATION NUMBER: US/08/100.247
FILING DATE: 30-JUL-1993
APPLICATION NUMBER: US/08/2001
FILEDCOMMUNICATION INFORMATION:
TELEDCOMMUNICATION OF SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 523 anino acids
TYPE: amino acids
TYPE: amino acids
                              TITLE OF INVENTION: as Therapeutic Agents
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell & Flores LLP
STREET: 4370 La Jolla Village Drive, Suite 700
CITT: San Diego
STATE: California
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; LOCATION: 1.523
; OTHER INFORMATION: /label- Hum_prosaposin
US-08-232-513A-3
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OPENATING SYSTEM: DOS
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
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Gaps

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TOPOLOGY:
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US-08-232-513A-1
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                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: O'Brien, John S.
APPLICANT: Kishinoto, Yasuo
TITLE OF INVENTION: PHARACEUTICAL COMPOSITIONS
TITLE OF INVENTION: COMPRISING PROSAPOSIN AND NEUROTROPHIC PEPTIDES DERIVED
TITLE OF INVENTION: THEREFROM
TUTLE OF INVENTION: THEREFROM
UNDER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
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                                                                                                         Score 61; DB 1; Length 22;
Pred. No. 0,00032;
0; Mismatches 8; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMFIGURE REARBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OMPUTER: IBM Compatible
OMPERATING SYSTEM: DOS
SOFTWARE: FastESQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,146A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: Knobbe, Martens, Olson and Bear
620 Newport Center Blvd. 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
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                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08483146A Patent No. 5696080 GENERAL INFORMATION:
                                                                                                                                                                                                       1 CEFLVKEVTKLIDNNKTEKE 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 CEXXXKEXXKXXDNNKXEKE 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYE
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFAX: 619-235-0176
                                                                                                       ch 46.6%;
1 Similarity 60.0%;
12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 60.09
Matches 12; Conservative
               FRAGMENT TYPE: internal intending SOURCE: CLONE: 22-MER FRAGMENT US-08-100-247-1
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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                                                                                                     Query Match
Best Local Similarity
Matches 12; Conserva
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92660
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New STATE: CA
ANTI-SENSE:
                                                                                                                                                                                                                                                                                              US-08-483-146A-1
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RESULT 11

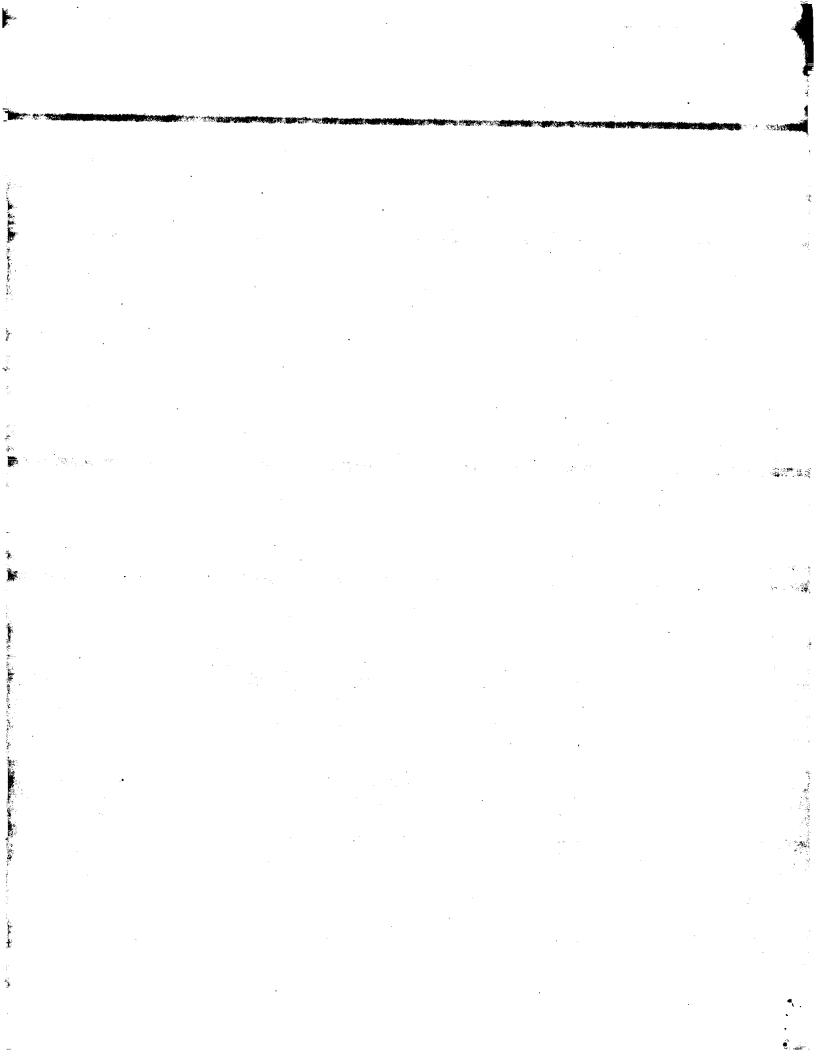
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Sequence 1, Application US/08484594A
Patent No. 5714459
GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
APPLICANT: Klahimoto, Yasuo
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
Sequence 1, Application US/08232513A
Patent No. 5700909
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
ADDRESSEE:
ADDRESSEE:
COMPDEN:
FILE OF INVENTION:
ADDRESSEE:
ADDRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 92122
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING DATE: 21-APR-1994
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Campbell & Flores LLP
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
46.6%; Score 61; DB 1; Le
Best Local Similarity 60.0%; Pred. No. 0.00032;
Matches 12; Conservative 0; Mismatches 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
ETLING DATE: 30-UL-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NAME/KEY: Peptide
; LOCATION: 1..22
; OTHER INFORMATION: /label- SapC
US-08-232-513A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
RERERCE/DOCKET NUMBER: P-UD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 CEXXXKEXXXXXDNNKXEKE 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 92660
COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: San Diego
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid
3Y: linear
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Patent No. 6271196
GENERAL INFORMATION:
APPLICANT: 0'BELEA John S.
TITLE OF INVENTION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides NUMBER OF SEQUENCES:
ADDRESSEE: Campbell and Flores
STREET: 4370 La Jolla Village Drive, Suite 700
CITY: San Diego
CITY: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/09148030C
Patent No. 6458357
GENERAL INFORMATION:
APPLICANT: White, Michael T.
APPLICANT: Wisher, John S.
APPLICANT: Wright, David E.
TITLE OF INVENTION: RETRO-INVERSO NEUROTROPHIC AND ANALGESIC
                                                                                                                                                     46.6%; Score 61; DB 4; Length 22; 60.0%; Pred. No. 0.00032; Live 0; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46.6%; Score 61; DB 4; Length 22; illarity 60.0%; Pred. No. 0.00032; Conservative 0; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER FEADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Eloppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/611;307
FILING DATE: 05-MAR-1996
CLASSIFICATION: 514
ATORNEY/AGBWT INFORMATION:
NAME: Campbell, Cathryn A.
REFERENCE/POCKET NUMBER: 9-UD 1928
TELECOMMUNICATION NUMBER: P-UD 1928
                                                                                                                                                                                                                                                 6 CEXXXKEXXKXXDNNKXEKE 25
                                                                                                                                                                                                                                                                        1 CEFLVKEVTKLIDNNKTEKE 20
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INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acids TOPOLOGY: 1-2
                                          : 22 amino acids
amino acid
GY: linear
                                                                                                                                                     Query Match
Best Local Similarity 60.0°
Matches 12; Conservative
                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 12; Conserva
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                                                                                    ;
TOPOLOGY:
US-09-231-159-1
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US-09-148-030-1
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                                              LENGTH:
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APPLICANT: O'Brien, John S.
TITLE OF INVENTION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides NUMBER OF SEQUENCE: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell and Flores
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/231,159
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 61; DB 1; I
Pred. No. 0.00032;
0; Mismatches 8;
                COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                  CORRELATION NUMBER: US/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/POCKET NUMBER: WYELOS.002DV2
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/231,159
FILING DATE: 05-MAR-1996
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1928
TELECHONE: (619) 535-9001
TELEFRONE: (619) 535-9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CEFLVKEVTKLIDNNKTEKE 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-231-159-1; Sequence 1, Application US/09231159; Patent No. 6268347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 CEXXXKEXXKXXDNNKXEKE 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46.6%;
ilarity 60.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: peptide
; FRAGMENT TYPE: internal
US-08-484-594A-1
Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: San Diego
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
STRANDEDNESS: sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear
MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92122
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Gaps



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GenCore version 5.1.6

Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: June 2, 2003, 14:14:18; Search time 15.1026 Seconds

(without alignments)
254.692 Million cell updates/sec

Title: US-09-780-438C-6

Perfect score: 131
Sequence: 1 XXCEXCEXXXKEXXXXDNNKXEKEXXDXXDKXCXKXX 38

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 383519 seqs, 101223694 residues

Total number of hits satisfying chosen parameters: 383519

Minimum DB seq length: 0

Maximum DB seq length: 2000000000
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Published_Applications_AA:*

Database :

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Sequence 2, Appli	Sequence 1, Appli		_	ò				_	Sequence 4, Appl	-	'n	Sequence 9, Appl.	Sequence 5, Appl	Sequence 2, Appl	4	Ň		Ξ.
OI	US-09-780-438A-2	US-09-780-438A-1	US-09-767-007A-3	US-09-753-126-3	US-10-043-487-340	US-09-767-007A-2	US-09-870-759-60	US-09-870-759-61	US-10-060-036-73	US-09-753-126-4	US-09-767-007A-1	US-09-957-143-1	US-09-767-007A-9	US-09-767-007A-5	US-09-957-143-2	US-10-293-819-2	US-09-802-617-2	US-09-932-183A-2	US-09-867-550-1934
DB	6	6	10	10	6	10	φ	σ	σ	10	10	10	10	10	10	σ	10	10	10
Query Match Length DB	38	40	80	80	209	523	524	527	527	592	22	22	22	18	18	15	15	2285	200
Query Match	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	46.6	46.6	41.2	38.2	38.2	34.4	34.4	32.1	29.8
Score	101	101	101	101	101	101	101	101	101	101	61	61	24	20	20	45	45	42	39
Result No.	П	7	m	4	S	9	7	ထ်	6	10	11	12	13	14	15	16	17	18	19

Sequence 1, Appli Sequence 3, Appli Sequence 8, Appli Sequence 74, Appl Sequence 74, Appl Sequence 1, Appl Sequence 1, Appl Sequence 16, Appl Sequence 16, Appl Sequence 16, Appl Sequence 158, Appl Sequence 134, Appl Sequence 134, Appl Sequence 12426, A Sequence 12773, A Sequence 12773, A Sequence 12773, A Sequence 12173, A Sequence 12773, A Sequence 2, Appl	Sequence 214, App Sequence 172, App Sequence 2, Appli Sequence 32, Appl Sequence 1, Appli Sequence 5193, Ap
9 US-10-293-819-1 10 US-09-802-617-1 10 US-09-957-143-3 10 US-09-767-007A-8 9 US-10-153-668-264 10 US-09-768-264 9 US-10-098-808-3 9 US-10-098-808-3 9 US-10-095-691-2 9 US-10-097-065-166 9 US-10-097-065-166 9 US-10-097-065-488 10 US-09-864-761-45507 10 US-09-815-242-1248 10 US-09-815-242-1248 10 US-09-815-242-12773 10 US-09-815-242-12773 10 US-09-815-242-12773 10 US-09-815-242-12773 10 US-09-815-242-12773	9 US-110-114-893-214 9 US-10-060-036-172 9 US-09-897-482-2 8 US-08-681-219-32 9 US-09-987-482-1 10 US-09-815-242-5193
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	6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6
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Sequence 2. Application US/09780438A
Publication No US20030095999A1
GENERAL INKOMATION:
GENERAL INKOMATION:
TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and POTITLE OF INVENTION: for Application to Transmembrane Drug Delivery Systems
FILE REFERENCE: 10872/04/4352
CURRENT FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: US 60/181,754
PRIOR PELICATION NUMBER: US 60/181,754
PRIOR FILING DATE: 2000-02-11
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1. Application US/09780438A
Publication No. US20030095999A1
GENERAL INFORMATION:
TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and PO TITLE OF INVENTION: For Application to Transmembrane Drug Delivery Systems FILE OF INVENTION UMBER: US/09/780,438A
CURRENT APPLICATION NUMBER: US/09/780,438A
CURRENT FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: US 60/181,754
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 101; DB 9;
Pred, No. 2.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 77.1
Best Local Similarity 55.9
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-780-438A-2
US-09-780-438A-2
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US-09-780-438A-1
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PRIOR APPLICATION NUMBER: 60/211,124
                                                                                                                                                                                                                                         TYPE: PRT
CORGANISM: Homo sapiens
US-09-753-126-3
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US-09-767-007A-2
                                                                                                                                                                                              SEQ ID NO 3
LENGTH: 80
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Fetent No. US200007727541
GENERAL INFORMATION:
APPLICANT: JOHN S. O'Brien
APPLICANT: Yasuo Kishimoto
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PHARMACEUTICAL
CURRENT APPLICATION NUMBER: US/09/767,007A
CURRENT APPLICATION NUMBER: US/09/767,007A
PRIOR APPLICATION NUMBER: 08/958,970
PRIOR PILING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 80
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Sequence 3, Application US/09753126

Sequence 3, Application US/09753126

Septent No. US20020127219A1

SEPTICANT: USENCE, JENS SIGURD

APPLICANT: JENSEN, ANNE DAM

APPLICANT: JENSEN, ANNE DAM

APPLICANT: JENSEN, ANNE DAM

APPLICANT: JENSEN, ANNE DAM

TITLE OF INVENTION: ACTIVATORS

TITLE OF INVENTION: ACTIVATORS

CURRENT APPLICATION NUMBER: US/09/753,126

CURRENT APPLICATION NUMBER: US/09/753,126

CURRENT PILING DATE: 1999-12-30

PRIOR FILING DATE: 1999-12-30

PRIOR FILING DATE: 1999-12-30

PRIOR FILING DATE: 2000-01-06

PRIOR FILING DATE: 2000-01-06
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Pest Local Similarity 55.9%; Pred. No. 5.7e-10;
Matches 19; Conservative 0; Mismatches 15;
                                                                                                                                                                                                                 Score 101; DB 9;
Pred. No. 2.9e-10;
0; Mismatches 15
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PRIOR FILING DATE: 2000-02-11
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin version 3.0
SEQ ID NO 1
LENGTH: 40
                                                                                                                                                                                                              Query Match
Best Local Similarity 55.9%;
Matches 19; Conservative
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ORGANISM: Artificial Sequence
                                                                                                                     ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-780-438A-1
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US-09-767-007A-3
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APPLICANT: HYBRIGENICS
APPLICANT: Fierre, LEGRAIN
TITLE OF INVENTION: Protein interactions between Shigella Flexneri polypep TITLE OF INVENTION: mammalian polypeptides
FILE REFERENCE: B4778A
CURRENT PAPLICATION NUMBER: US/10/043,487
CURRENT FILING DATE: 2002-04-30
PRIOR APPLICATION NUMBER: US 60/261,130
PRIOR FILING DATE: 2001-01-12
NUMBER OF SEQ ID NOS: 561
SOFTWARE: Patentin version 3.1
SEQ ID NO 340
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Patent No. US20020077275A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Vasuo Kishimoto
TITLE OF INVENTION: PHARMACCUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PARSOSIN C.
TITLE OF INVENTION: PARSOSIN C.
TITLE OF INVENTION: SAPOSIN C.
CURRENT APPLICATION NUMBER: US/09/767,007A
CURRENT FILING DATE: 2001-01-22
PRIOR PLILING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
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Pred. No. 1.5e-09;
0; Mismatches 15
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PRIOR FILING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: PA 2000 01027
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-07-11
NUMBER OF SEQ ID NOS: 147
SOFTWARE: Patentin Ver. 2.1
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Publication No. US20030055220A1
GENERAL INFORMATION:
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55.9%;
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US-10-043-487-340
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Best Local Similarity 55.99
Matches 19; Conservative
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Best Local Similarity 55.95
Matches 19; Conservative
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Sequence 4. Application US/09753126

Patent No. US2002012719A1

GENERAL INFORMATION:

APPLICANT: OKELS, JENS SIGURD

APPLICANT: OKELS, JENS SIGURD

APPLICANT: HALKIER, TORBEN

APPLICANT: HALKIER, TORBEN

TITLE OF INVENTION: IMPROVED LYSOSOMAL ENZYME

TITLE OF INVENTION: ACTIVATORS

FILE REPREBRENCE: 31-000600US

CURRENT APPLICATION NUMBER: PA 1999 01891

PRIOR FILING DATE: 2001-06-11

PRIOR FILING DATE: 2000-01-06

PRIOR FILING DATE: 2000-01-06

PRIOR FILING DATE: 2000-06-02

PRIOR FILING DATE: 2000-06-02

PRIOR FILING DATE: 2000-06-02

PRIOR PLICATION NUMBER: 60/211,124

PRIOR FILING DATE: 2000-06-02

PRIOR FILING DATE: 2000-06-12

PRIOR PRIOR PRIOR FILING DATE: 2000-06-12

PRIOR PR
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                                                                    APPLICANT: Benson, Darin R.
APPLICANT: Kalos, Michael D.
APPLICANT: Lodes, Michael J.
APPLICANT: Persing, David H.
APPLICANT: Hepler, William T.
APPLICANT: Higher, William T.
APPLICANT: Jiang, Yuqiu
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
FILE OF INVENTION: AND DIAGNOSIS OF PANCREATIC CANCER
FILE REFERENCE: 210121.566
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Pred. No. 4.1e-09;
0; Mismatches 15;
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55.9%; Pred. No. 3.6e-09;
tive 0; Mismatches 15
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                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/10/060,036 CURRENT FILING DATE: 2002-01-30 NUMBER OF SEQ ID NOS: 4560 SEQTIARE: EastSEQ for Windows Version 4.0 SEQ ID NO 73 LENGTH: 527
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55.98;
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             Publication No. US20030073144A1
GENERAL INFORMATION:
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Best Local Similarity 55.99
Matches 19; Conservative
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SOFTWARE: Patentin Ver. 2.1
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Best Local Similarity 55.9
Matches 19; Conservative
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US-10-060-036-73
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LENGTH: 592
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Patent No. US2002017551A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
FILE REFERENCE: 870759
CURRENT FILING DATE: 2002-01-14
PRIOR APPLICATION NUMBER: US 60/208,128
PRIOR PLING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
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APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
FILE REFERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT FILING DATE: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: PATENTIN VEFSION 3.1
ENCYTARE: PATENTIN VEFSION 3.1
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Pred. No. 3.6e-09;
0; Mismatches 15;
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Pred. No. 3.6e-09;
0; Mismatches '15;
                                                                                                    Score 101; DB 10;
Pred. No. 3.6e-09;
0; Mismatches 15;
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                                                                                                                                                                                                                         3 CEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXK 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 CEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXK 36
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Patent No. US20020177551A1
GENERAL INFORMATION:
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Best Local Similarity 55.9%;
Matches 19; Conservative
                                                                                                 Query Match
Best Local Similarity 55,9%;
Matches 19; Conservative
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Best Local Similarity 55.9%;
Matches 19; Conservative
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ORGANISM: Homo sapiens
; ORGANISM: homo sapiens
US-09-767-007A-2
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US-09-870-759-60
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US-09-870-759-60
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US-10-060-036-73
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Length 592;

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Sequence 9, Application US/09767007A

Sequence 9, Application US/09767007A

Patent No. US20020077275Ai

GENERAL INFORMATION:
APPLICANT: JOHN S. O'Brien

APPLICANT: JOHN S. O'Brien

TITLE OF INVENTION: SADOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREPROM
FILE OF INVENTION: SADOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREPROM
FILE OF INVENTION: SADOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREPROM
FILE CURRENT FILING DATE: 2001-01-22

PRIOR APPLICATION NUMBER: 08/958,970

PRIOR FILING DATE: 1997-10-28

NUMBER OF SEQ ID NOS: 11

SOFTWARE FastSEQ for Windows Version 4.0

SEQ ID NO 9

LENGTH: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.2%; Score 54; DB 1: 50.0%; Pred. No. 0.01;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: Artificial peptide US-09-767-007A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: Artificial peptide US-09-767-007A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/09767007A Patent No. US20020077275A1 GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 KEVTKLIDNNKTEKE 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 50.05
Matches 10; Conservative
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Best Local Similarity 66.7
Matches 10; Conservative
                       -09-767-007A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-09-767-007A-5
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US-09-957-143-2
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                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: Yasuo Kishimoto
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILE REFERENCE: WRELOA. 2001-01-22
PRIOR PILLIATION NUMBER: 08/958,970
PRIOR FILLING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FASTSEQ for Windows Version 4.0
ELENGTH: 22
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Pred. No. 0.00071;
0; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 22;
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Pred. No. 0.00071;
0; Mismatches 8; Indels
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Sequent No. US20020128193A1

GENERAL INFORMATION:
APPLICANT: John S. O'Brien
APPLICANT: David E. Wright
TITLE OF INVENTION: RETRO-INVERSO PROSAPOSIN-DERIVED
TITLE OF INVENTION: PEPPILES AND USE THEREOF
FILE REFERENCE: MYELOS.018C1
GURRENT APPLICATION NUMBER: US/09/957,143
CURRENT FILING DATE: 2001-09-19
PRIOR APPLICATION NUMBER: 60/126,991
SEQUENCE: SEQUENCE: 1999-03-30

NUMBER OF SEQUENCE: 1999-03-30

SOFTWARE: FastSEQ for Windows Version 4.0

SEQUENCE: LENGTH: 22
CEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXK 36
                               5 CEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSK 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ) OTHER INFORMATION: Artificial peptide US-09-767-0078-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Synthetic peptide US-09-957-143-1
                                                                                                                                                           Sequence 1, Application US/09767007A
Patent No. US2002007727541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CEFLVKEVTKLIDNNKTEKE 20
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ORGANISM: Artificial Sequence
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60.0%;
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Best Local Similarity 60.0%;
Matches 12; Conservative
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Best Local Similarity 60.0'
Matches 12; Conservative
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US-09-957-143-1
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Gaps

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Indels

Length 22;

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APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: Yasuo Kishimoto
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: PARAMACEUTICAL
TITLE OF INVENTION: PARAMACEUTICAL
CURRENT PILLING DATE: 2001-01-22
CURRENT APPLICATION NUMBER: 08/958,970
PRIOR APPLICATION NUMBER: 08/958,970
PRIOR FILING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              38.2%; Score 50; DB 10; Length 18; 66.7%; Pred. No. 0.039;
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; TITLE OF INVENTION: RETRO-INVERSO PROSAPOSIN-DERIVED
; TITLE OF INVENTION: PEPTIDES AND USE THEREOF
; FILE REFERENCE: WELGOS.018C1
; CURRENT APPLICATION NUMBER: US/09/957,143
; CURRENT FILING DATE: 2001.09-19
; PRIOR APPLICATION NUMBER: G0/126,991
; PRIOR APPLICATION NUMBER: 60/126,991
; PRIOR FILING DATE: 1909-03-30
; PRIOR FILING DATE: 1909-03-30
; NUMBER OF SEC ID NOS: 10
; SOFTWARE: FastSEQ for Windows Version 4.0
; SOFTWARE: PRIOR DAYS: 10
; SOFTWARE: Ratificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic peptide
; FEATURE:
; OTHER INFORMATION: Synthetic peptide
US-09-957-143-2

QUETY MATCh

Matches 10; Conservative 0; Mismatches 5; Indels 0; Gaps

QY 11 KEXXXXXDNNXXERE 25

DD 2 KEVTKLIDNNXTERE 16
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Search completed: June 2, 2003, 14:17:53 Job time: 15:1026 secs

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: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.
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1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                                                         908470 seqs, 133250620 residues
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Perfect score:
Sequence:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000.DAT:*/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*/SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999

/SIDS2/gcgdata/geneseq/genesegp-emb

/gcgdata/geneseq/geneseqp-embl/AA1996.DAT:

/gcgdata/geneseq/geneseqp-embl/AA199

/SIDS2,

/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995

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/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1992

/SIDS2/gcgdata/geneseq/geneseqp-emb

/gcgdata/geneseq/geneseqp-embl/AA199 /SIDS2/gcgdata/geneseq/geneseqp-embl/AA199

SIDS2

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/SIDS2/gcddta/geneseq/geneseqp embl/AA1982.DAT:*
/SIDS2/gcddta/geneseq/geneseqp embl/AA1983.DAT:*
/SIDS2/gcddta/geneseq/geneseqp-embl/AA1984.DAT:*
/SIDS2/gcddata/geneseq/geneseqp-embl/AA1985.DAT:*
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/SIDS2/gcddta/geneseq/geneseqp-embl/AA1987.DAT:*
/SIDS2/gcddta/geneseq/geneseqp-embl/AA1987.DAT:*

SUMMARIES

Description	Saposin-C. Homo s	Human saposin C.	Human Saponin C, S	Amino acid sequenc	Prosaposin, Homo	Human prosaposin N	Human prosaposin.	Amino acid sequenc	Human glucocerebro	Human saposin C.
ID	AAR70784	AAW85653	AAU05697	AAB31916	AAR70783	AAW85652	AAY58716	AAB31915	AAU05698	AAB67289
DB	16	20	22	22	16	20	21	22	22	22
* Query ore Match Length DB II	80	80	80	523	524	524	524	527	592	25
& Query Match	100.0	100,0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	64.9
Score	131	131	131	131	131	131	131	131	131	82
Result No.	-	7	m	7	50	9	7	æ	6	10

Saposin-C neurotro Prosaposin-derived Prosaposin recepto Prosaposin recepto Prosaposin recepto Peptide #5. Homo Human saposin C 22 Novel human grosa Mutant human prosa Prosaposin derivat Bovine saposin C. Drosaposin derivat Bovine prosaposin- Brosaposin aelanog Bovine prosaposin- Prosaposin recepto	Prosaposin recepto Mouse ischaemic co Drosophila melanog Human polypeptide Bacillus subtilité Bacillus subtilité Novel human diagno Novel human diagno Novel human diagno Human protein SEQ Human protein SEQ Human protein SEQ Human lipid metabo Drosophila melanog Novel human diagno Human lipid metabo Drosophila melanog Novel human diagno Human lipoprotein Human lipoprotein Human phospholipas Arabidopsis thalia Human Fas antigen Arabidopsis thalia	SEN	s system; neuroblastoma; is; leukoencephalitis;	00247. 12513. 5; c out-growth and myelination - with or new neurotrophic peptide(s) from
AAR70773 AAW30013 AAW85656 AAR85656 AAR6281 ABG22055 AAW30028 AAW30028 AAW67233 AAW67233	AWW85661 ABB57102 AAB57102 AAW39351 AAW41137 AAW91137 ABC05001 ABC05001 ABC01052 AAW9193 ABC12052 AAW9193 ABC12052 AAW9193 ABC11010 ABC07753 ABC077	ALIGNMENTS	on; nervous le sclerosi	growth and
118 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	181155555555555555555555555555555555555	ln; t	lination multiple	247. 513. 5ut-
	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	₽	c; neuron; myelination; phic peptide; multiple; leukodystrophy. tens. 1-A.	S-010 S-023 S-023 Cen JS
20000000000000000000000000000000000000	88888888888888888888888888888888888888	standard; 95 (firs	eur ody	EN O O 202
77777777777777777777777777777777777777	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	70784 70784; AUG-19	posin-(urotro) renal mo sap 950382	28-JUL-1994; 30-JUL-1993; 21-APR-1994; (OBRI/) OBRIEN Kishimoto Y, WPI; 1995-0820 Stimulating ne pro:saposin, s
222222222222		RESULT 1 AAR70784 ID AAR70784 XX AC AAR XX XX XX XX DT 30- XX XX XX		FXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

us-09-780-438c-6.dx.rag

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WO200149830-A2
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02-JUN-2000;
30-JUN-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Huntington's disease; ischemic heart disease; Guillain-Barre disease; alopecia; AIDS dementia; cerebral malaria; HTLV; neuropathy; inflammatory neurodegenerative disease; toxin-induced liver disease.
                                                                                                                                                                                                                    Gaps
                                                        human saposin-C (AAR70784), promotes heurite outgrowth in vitro.
A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic cytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary neurotrophic factor, interleukins-6, -2, -3 and -gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myelination ex vivo.
                                               The peptide given in AAR70773, corresponding to amino acids 8-29 of
                                                                                                                                                                                                                                                                                                                                                                                                                      Prosaposin; saposin; prosaptides; prosaposin receptor agonists; PRA; peripheral nervous system; central nervous system; PNS; CNS; Akt; Bcl-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumation arthritis; Crohn's disease; irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis;
                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acute disseminated inflammatory leukoencephalitis;
progressive multifocal leukoencephalitis; Alzheimer's disease;
                                                                                                                                                                                           DB 16; Length 80;
                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Parkinson's disease; amyotrophic lateral sclerosis;
                                                                                                                                                                                                                                        1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                      3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
cytokine(s), for treating nervous system diseases
                                                                                                                                                                                       100.0%; Score 131; DB 16
50.0%; Pred. No. 4.4e-05;
tive 19; Mismatches 0
                       Disclosure; Page 32; 50pp; English,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Use of prosaposin receptor agonist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; Figure 2; 90pp; English.
                                                                                                                                                                                                                                                                                                                          AAW85653 standard; Peptide; 80
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97US-0058352.
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                                                                                                                                                                                                                   Conservative
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                                                                                                                                                                                                     Similarity
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                                                                                                                                                                   80 AA;
                                                                                                                                                                                                                                                                                                                                                                                                  Human saposin C.
                                                                                                                                                                                         Query Match
Best Local Simi
Matches 19;
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09-SEP-1997;
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control derived proline residues. Prosaposin, saposin C and procaposin derived proline residues. Prosaposin, can define the promoting recovery after toxic, traumatic, myocardial isohraemic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) central nervous system. Prosaposin receptor applicates of BC1-2 cambers which inhibit caspases, thereby inhibiting apoptosis. An activation of JNK, a proapoptotic signaling component. Within activation of JNK, a proapoptotic signaling component. Within activation of JNK a proapoptotic signaling component. Within activation of JNK a proapoptotic signaling component. Within activation of JNK by TNF alpha is another well known mechanism for activation of JNK by TNF alpha is another well known mechanism for activation of JNK by TNF alpha is another vell known mechanism for activation of JNK by TNF alpha is another vell known mechanism for caspase-mediated or induced by a proinflammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis which is caspase-mediated with a disorder such as e.g. rheumatoid attitions. Sidesase, irritable bowel syndrome, asthma, cardiac infarction, congestive heart failure, multiple sclerosis, acute leavened palaters, acute method inflammatory leuvenecephalitis, progressive multifocal method parters amount many content munitarial method inflammatory luminations at many processive multifocal contents amount of a parters of an unitariant multiple sclerosis, acute method amonic unitariant method sease, and a parter of a parter of a menor of a parter of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amyotrophic lateral sclerosis, Huntington's disease, ischemic heart disease, Gulllain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AIDS dementia, cerebral malaria, HTLV, neuropathy, inflammatory neurodegenerative disease, and toxin-induced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             liver disease. Saposin C acts as a prosaposin receptor agonist.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 131; DB 20;
Pred. No. 4.4e-05;
9; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Halkier T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scheie syndrome; Saponin C; SapC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAU05697 standard; Protein; 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
50.0%; P
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2000DK-0000865.
2000DK-0000866.
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Best Local Similarity 50.0%
Matches 19; Conservative
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523 AA;

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degenerative, neurological and/or auto-immune disease. The polynucleotides and polypeptides are used for diagnosis, prognosis, prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisense sequences). They can also be used to assess efficacy of potential therapeutic agents, particularly compounds that reduce or inhibit toxicity towards glial
                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                                                                                              AAR70783
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                                                                                                                    co-factor for the lysosomal enzyme glucocerebrosidase, GCB. GCB is the enzyme involved in Gaucher's disease, a lysosomal storage disease. The invention relates to introducing new glycosylation sites into lysosomal enzymes/activators like GCB to improve their bloactivity. The novel polypeptides are used for the prevention and treatment of Gaucher's disease, Farber's disease, G_m_l gangliosidosis, Tay-Saoh's disease, Niemann-Pick disease, Shindler disease, Hunter syndrome, Sly syndrome, Hurler and Huler/Scheie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence represents a human protein, which is used in the method of the invention. The specification describes a method which uses at least one polypeptide or polynucleotide sequence belonging to the perlecan, precursor of the retinol-binding plasma protein, precursor of the ganglioside GM2 activator, calgranulin B or saposin B protein families. The method is used for detecting, preventing a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; perlecan; retinol-binding plasma protein; calgranulin B; vaccine; ganglioside GMZ activator; saposin B; degenerative disease; glial cell; neurological disease; auto-immune disease; multiple sclerosis; toxicity; Alzhelmer's disease; Parkinson's disease; amyotrophic lateral sclerosis; rheumatoid polyarthritis; lupus erythematosus; gene therapy.
                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detecting, preventing and treating degenerative, neurological and autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand -
                                                                                                                                                                                                                                                                                                                                Gaps
                             Improved lysosomal enzymes and lysosomal enzyme activators useful treating Gaucher's disease - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perron
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                                                                                                      The sequence represents human Saponin C (SapC), an essential
                                                                                                                                                                                                                                                                                                Score 131; DB 22; Length 80; Pred. No. 4.4e-05;
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VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                                                                                                                                          1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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                                                                                                                                                                                                                                                                                                              ; Pred. No. 4.4e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Amino acid sequence of a human protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 174-175; 209pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB31916 standard; Protein; 523 AA
                                                                        Example 5; Page 96; 97pp; English.
                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                               50.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                               Local Similarity 50.09
nes 19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-159475/16.
WPI; 2001-465259/50
                                                                                                                                                                                                                                                                    80 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-JUL-1999;
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                                                                                                                                                                                                                                         syndromes.
                                                                                                                                                                                                                                                                    Sequence
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                                                                                                                                                                                                                                                                                                Query Match
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Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis; adrenal leukodystrophy; prosaposin.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
        Length
                                                       Indels
                                                                                                                                          312 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
                                                                                                           1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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100.0%; Score 131; DB 2; 50.0%; Pred. No. 0.00059;
                           Pred. No. 0.00
9; Mismatches
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                                                                                                                                                                                                                                                                                               AAR70783 standard; Protein; 524
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  Query Match
Best Local Similarity 50.0%
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1995-082029/11.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  524 AA
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                                                                                                                                                                                                                                                                                                                                                                                                        30-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-JUL-1994;
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AAY58716;
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Protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     prosaposin is a 70kDa glycoprotein which is proteclytically processed to generate saposins A, B, C and D, all of which are similar to each other and have a similar placement of six cysteines, a glycosylation site and conserved proline residues. Prosaposin, saposin C and prosaposin derived peptides (prosaptides), have therapeutic and conserved proline recovery after toxic, traumatic, myocardial ishchaemic, degenerative and inherited lessions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit proinflammatory cytokine-induced apoptosis by activation of the Ser/Arm protein kinase Akt. Akt dissociates complexes of Bcl-2 family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members, such as BAD-Bcl-2, releasing Bcl-2 and its family members which inhibit caspases, thereby inhibiting apoptosis. An additional mechanism whereby PRAs inhibit apoptosis is by blocking activation of JNK, a proapoptotic signaling component. Within several minutes after binding to the receptor, PRAs block JNK activation induced by tumor necrosis factor-alpha (TNF alpha). The activation of JNK by TNF alpha is another well known mechanism for TNF alpha-induced, as well as other proinflammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis which is
                                                                                                                                                                                                                                                                                                        irritable bowel syndrome; asthma; cardiac infarction; congestive heart failure; multiple sclerosis; acute disseminated inflammatory leukoencephalitis; acute disseminated inflammatory leukoencephalitis; Alzheimer's disease; Parkinson's disease; amyotrophic lateral sclerosis; Huntington's disease; isohemic heart disease; Guillain-Barre disease; alopecia; AIDS dementia; cerebral malaria; HTLV; neuropathy; inflammatory neurodegenerative disease; toxin-induced liver disease.
                Gaps
                                                                                                                                                                                                                                                       PRA; peripheral nervous system; central nervous system; PNS; CNS; Akt; Bcl-2; therapy; treatment; apoptosis; caspase; tumour necrosis factor; TNF; cytokine; interferon gamma; IFN; inflammation; rheumatoid arthritis; Crohn's disease;
                                                                                                                                                                                                                                            Prosaposin; saposin; prosaptides; prosaposin receptor agonists;
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                Indels
                                                       313 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 350
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0
.Pred. No. 0.00059;
19; Mismatches 0
                                                                                                                                                                                                                Human prosaposin N-terminal peptide.
                                                                                                                                  AAW85652 standard; Protein; 524 AA.
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             19;
 50.08;
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                                                                                                                                                                                      (first entry)
             19; Conservative
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N-PSDB; AAX08488.
 Best Local Similarity
Matches 19; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       409912559-A1
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09-SEP-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O'brien JS;
                                                                                                                                                           AAW85652;
                                                                                                                      AAW85652
                                                                                                         RESULT
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caspase-mediated or induced by a proinflammatory cytokine, for example TNF alpha or interferon-gamma. It can be used for inhibiting apoptosis associated with a disorder such as e.g. rhematoid arthritis, Crohn's disease, irritable bowel syndrome, asthma, cardiac infarction, congestive heart failure, multiple sclerosis, acute disseminated inflammatory leukoencephalitis, progressive multifocal leukoencephalitis, Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, Huntington's disease, ischemic heart disease, Guillain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AIDS dementia, cerebral malaria, HILV, neuropathy, inflammatory neurodegenerative disease, and toxin-induced liver disease. This 524 N-terminal peptide of prosaposin also acts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saposin B derived peptides, useful as inhibitors of angiogenesis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="mature saposin B"
195..205
/note= "specifically claimed antiangiogenic peptide
of Claim 23"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196..200 -
/note= "specifically claimed antiangiogenic peptide
of Claim 4"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Prosaponin, saponin B; antiangiogenic; anglogenesis inhibitor; antitumour; antiprolliferative; antimigratory; Kaposi's sarcoma; tumour; human; .therapy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 524;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 100.0%; Score 131; DB 20 Local Similarity 50.0%; Pred. No. 0.00059; es 19; Conservative 19; Mismatches 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             į
                                                                                                                                                                                                                                                                                                                                                                                             as a prosaposin receptor agonist.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY58716 standard; Protein; 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0092647.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     524 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human prosaposin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GILL/) GILL P S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200002902-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo saplens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumor growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-APR-2000
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              antiproliferative and antimigratory activity against endothelial cells. This activity is conserved in cryptic polypeptides as small as 5 amino acids (see AAY58684-715), which can be synthetically prepared and used in vitro or in vivo for the treatment of undesired angiogenesis and tumor growth, especially Raposi's sarcoma (claimed). The polypeptides can also be used in conjunction with cytocoxic moleties to selectively kill certain cell types, e.g. for treatment of cancer, anglofibroma, neovascular glaucoma, arteriovenous malformation, nonunion fracture, arthritis and other connective tissue disorders, Osler-Weber syndrome, atherosclerotic plaque, psoriasis, corneal graft neovascularization pyogenic granuloma, retroiental fibroplasia, diabetic retinopathy, scleroderma, haemangloma, trachoma, vascular adhesions and hypertropic scars.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; perlecan; retinol-binding plasma protein; calgranulin B; vaccine; ganglioside GMZ activator; saposin B; degenerative disease; glial cell; neurological disease; auto-immune disease; multiple sclerosis; toxicity; Alzheimer's disease; Parkinson's disease; amyotrophic lateral sclerosis; rheumatoid polyarthritis; lupus erythematosus; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence represents a human protein, which is used in the method of the invention. The specification describes a method which uses at least one polypeptide or polynucleotide sequence belonging to the perlecan, precursor of the retinol-blinding plasma protein, precursor of the families. The method is used for detecting, preventing or treating a families. The method is used for detecting, preventing or treating a degenerative, neurological and/or auto-immune disease. The polynucleotides and polypeptides are used for diagnosis, prognosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Detecting, preventing and treating degenerative, neurological and autoimmune diseases, particularly multiple sclerosis, using specified polypeptides or related nucleic acid or ligand -
                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                                                                                                                                                                                                                                        DB 21; Length 524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Santoro L,
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                       313 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 350
  antiangiogenic and antitumour activity,
                                                                                                                                                                                                                                                                                                                                                                                                                                  1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 131; DB 21
50.0%; Pred. No. 0.00059;
ive 19; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Malcus C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Amino acid sequence of a human protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 172-173; 209pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB31915 standard; Protein; 527 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Charles M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-JUL-2000; 2000WO-FR02057.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (INMR ) BIOMERIEUX STELHYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                       l Similarity 50.0
19; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-159475/16.
                                                                                                                                                                                                                                                                                                                 524 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200105422-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-JAN-2001
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Best Local (
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prevention and treatment of multiple sclerosis (in its various forms and phases). They may also be useful in cases of e.g. Alzheimer's and Parkinson's diseases, amyotrophic lateral sclerosis, rheumatoid polyarthritis and lupus erythematosus, including use as vaccines and in gene therapy (expression of sense or antisease sequences). They can also be used to assess efficacy of potential therapeutic agents, particularly compounds that reduce or inhibit toxicity towards glial
                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                          Human; glucocerebrosidase; GCB; lysosomal storage disease;
Gaucher's disease; Fabry's disease; Farber's disease;
G_m_l apaqliosidosis; Tay-Sach's disease; Niemann-Pick disease;
Shindler disease; Hunter syndrome; Sly syndrome; Huler syndrome;
Scheie syndrome; fusion protein; Saponin C; SapC.
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                                                                                                                                                                                                                                                                                                                                                                   Human glucocerebrosidase, GCB-Saponin C, SapC, fusion protein.
                                                                                                                                             DB 22; Length 527;
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                                                                                                                                                                      Indels
                                                                                                                                                                                                            316 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 353
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                                                                                                                                                                                               1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX
                                                                                                                                             100.0%; Score 131; DB 2: 50.0%; Pred. No. 0.0006;
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                                                                                                                                                      Pred. No. 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'note- "N-glycosylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note- "N-glycosylated"
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/label= Linker_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Halkier T,
                                                                                                                                                                                                                                                                                       AAU05698 standard; Protein; 592 AA
                                                                                                                                                                    19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'label- SapC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96..592
/label- GCB
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02-JUN-2000; 2000DK-0000865.
02-JUN-2000; 2000DK-0000866.
30-JUN-2000; 2000DK-0001027.
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                                                                                                                                                                                                                                                                                                                                         24-OCT-2001 (first entry)
                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jensen AD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MAXY-) MAXYGEN APS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-465259/50
                                                                                                                                                       Local Similarity
es 19; Conserv
                                                                                                                   527 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
Synthetic.
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                                                                                                                                                                                                                                                                                                                 AAU05698;
                                                                                                                      Sequence
                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein
                                                                                          cells.
                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                             RESULT 9
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Improved lysosomal enzymes and lysosomal enzyme activators useful for

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Query Match

Matches

RESULT 10

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The peptide given in AAR70784, corresponding to amino acids 8-29 of human saposin-C (AAR70784), promotes neurite outgrowth in vitro. A consensus sequence was determined by comparing the peptide with hematopoietic and neuropoietic sytokines, and neurotrophic peptides (AAR70774-82) were identified in the AB loop of human ciliary neurotrophic factor, interleukins-6, -2, -3 and -gamma, erythropoietin and leukocyte inhibitory factor, and in helix C of human interleukin-1-beta and oncostatin-M. Prosaponin (AAR70783) and saposin-C also promoted nerve cell myellnation ex vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Saposin-C; neuron; myelination; nervous system; neuroblastoma; neurotrophic peptide; multiple sclerosis; leukoencephalitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stimulating neural cell out-growth and myelination - with pro:saposin, saposin C or new neurotrophic peptide(s) from cytokine(s), for treating nervous system diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 16; Length 22;
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Best Local Similarity 54.5%; Pred. No. 0.95;
Matches 12; Conservative 10; Mismatches
                             6 CEXXXKEXXKXXDNNKXEKEXXDXX 30
                                                                               25
                                                              1 CEFLVKEVTKLIDNNKTEKEILDAF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 CEXXXKEXXKXXDNNKXEKEXX 27
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                                                                                                                                                                                                                             AAR70773 standard; peptide; 22 AA
                                                                                                                                                                                                                                                                                                                                                                                                      Saposin-C neurotrophic peptide.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94WO-US08453
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                                                                                                                                                                                                                                                                                                                                                (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      adrenal leukodystrophy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                30-AUG-1995
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                                                                                                                                                                                                                                                                                        AAR70773;
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                                                                                                                                                                  RESULT 11
AAR70773
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                                                                                                                                                                                                                                                              셤
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                                                                                                                                    glucocerebrosidase, GCB and its co-factor, Saponin C, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22; Length 592;
                                                                                                             The sequence is a fusion protein of human lysosomal enzyme
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sadamoto Y;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 XXCEXCEXXXKEXXXXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 131; DB 22
50.0%; Pred. No. 0.0007;
:1ve 19; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Morita F,
                                                     Example 5; Page 96-97; 97pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99JP-0185155
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treating Gaucher's disease
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SAKA/) SAKANAKA M.
TANA/) TANAKA J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4PI; 2001-204263/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
les 19; Conserv
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Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                592 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TANA/) TANAKA (SATO/) SATO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-JUN-1999;
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                                                                                                                                                                                                                                                                                                                                                                              syndromes.
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Gaps

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Indels

Query Match

us-09-780-438c-6.dx.rag

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Use of prosaposin receptor agonists - for alleviating neuropathic pain, inhibiting sensory or motor neuropathy, or inhibiting neural
                                                                                                                                              Claim 3; Page 2; 67pp; English.
97WO-US04143.
                     (REGC ) UNIV CALIFORNIA
                                                                 WPI; 1998-495790/42.
                                                                                                                                                                                                                                                                                                                                                                             22 AA;
                                                                            N-PSDB; AAV07664
05-MAR-1997;
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                                            O'Brien JS;
                                                                                                               pain, inhik
cell death
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Matches
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                                                                                                                                                                                                                                                                                                       The present sequence represents a prosaposin-derived peptide. A method has been developed of alleviating or preventing neuropathic pain in a subject, comprising administering an effective amount of an active fragment of prosaposin to the subject. The prosaposin-derived peptide is useful for therapy of neural or demyelination disorders in neural tissue. It can be used to stimulate neurite outgrowth, inhibit neural cell death, promote myelination or inhibit demyelination. The method is used to alleviate neuropathic pain resulting from a peripheral nerve disorder, such as neuroma, nerve compression, crush or stretch and incomplete nerve transsection, mononeuropathy crush or stretch and Alternatively the neuropathic pain results from a disorder of the dorsal root ganglia, spinal cord, brainstem, thalamus or cortex.
         Human; prosaposin; neural disorder; demyelination disorder;
neural cell death; inhibition; myelination; neurite outgrowth;
neuropathic pain; peripheral nerve disorder; neuroma; mononeuropathy;
polyneuropathy; dorsal root ganglia; spinal cord; brainstem; thalamus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                  Prosaposin-derived peptide - useful for therapy of neural or demyelination disorders in neural tissue
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CEFLVKEVTKLIDNNKTEKEIL 22
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                                                                                                                                                                                                                                                                                    Claim 9; Page 52; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Prosaposin receptor agonist #1.
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                                                                                                                                  97WO-US04143.
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                                                                                                                                                         96US-0611307
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nes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                         22 AA;
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                                                                                      WO9732895-A1
                                                                                                                                    05-MAR-1997;
                                                                                                                                                         05-MAR-1996;
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                                                                  Homo sapiens
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                                                                                                             12-SEP-1997
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                                                                                                                                                                                                     O'Brien JS;
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Matches
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The invention relates to prosaposin receptor agonists. Also claimed are: (1) methods for alleviating neuropathic pain or inhibiting the conset of neuropathic pain, comprising administering a prosaposin receptor agonist; (2) inhibiting sensory or motor neuropathy, comprising receptor agonist; (3) methods for stimulating neurite outgrowth, inhibiting neural cell death, promoting mevelination, or inhibiting comprising ontacting neuronal cells with a composition, or inhibiting demyelination comprising a prosaposin receptor agonist which has 14-50 amino acids and comprises the sequence of a propasposin derived protein. The processes may be used for treatment of neuropathic pain resulting from peripheral nerve disorders (e.g. neuroma, nerve compression, nerve crush, nerve stretch, incomplete nerve transsection, mononeuropathy or polyneuropathy or disorders of dorsal root ganglia, the spinal cord, the brainstem, the the ortex. The present agonists do not cause undesirable prosaposin receptor agonist.
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les 12; Conservative
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Search completed: June
Job time : 35 secs
Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                    Prosaposin is a 70kDa glycoprotein which is proteclytically processed to generate saposins A, B, C and D, all of which are similar to each other and have a similar placement of six cysteines, a glycosylation after and have a similar placement of six cysteines, a glycosylation of the and conserved proline residues. Prosaposin, saposin C and prosaposin derived peptides (prosaptides), have therapeutic applications in promoting recovery after toxic, traumatic, myocardial ishchaemic, degenerative and inherited lesions to the peripheral and central nervous system. Prosaposin receptor agonists (PRAs) inhibit proinflammatory cytokine-induced apoptosis by activation of the Ser/Thr protein kinase Akt. Akt dissociates complexes of Bcl-2 family members, such as BAD-Bi-2, releasing Bcl-2 and its family members which inhibit caspases, thereby inhibiting apoptosis. An additional mechanism whereby PRAs inhibit apoptosis is by blocking activation of JNK, a proapoptofic signaling component. Within activation of JNK, by Three alpha is another well known mechanism for activation of JNK by Thr alpha is another well known mechanism for TNF alpha-induced by tumor necrosis factor-alpha (TNF alpha). The cappates associated or induced by a proinflammatory cytokine-induced apoptosis. The method can be used for inhibiting apoptosis which is caspase-mediated or induced by a proinflammatory cytokine-induced arthritis. Crohn's disease, irritable bowel syndrome, asthma, cardiac arthritis, action, concestive heart silvine, multiple sclerosis, acute
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amyotrophic lateral sclerosis, Huntington's disease, ischemic heart disease, Guillain-Barre disease, traumatic brain injury, traumatic spinal cord injury, alopecia, AIDS dementia, cerebral malaria, HTLV, neuropathy, inflammatory nacodegenerative disease, and toxin-induced liver disease. This peptide corresponds to amino acids 8 to 29 of human saposin C (See AAM85653) and acts as a prosaposin receptor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 infarction, congestive heart failure, multiple sclerosis, acute disseminated inflammatory leukoencephalitis, progressive multifocal leukoencephalitis, Alzheimer's disease, Parkinson's disease,
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                                                                                                                                                                                                                                                                                                                                                 Claim 7; Page 66; 90pp; English.
                  98WO-US19216.
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97US-0058352
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                                                                                                                                              (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                             WPI; 1999-229139/19.
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                  09-SEP-1998;
                                                                  04-JUN-1998;
09-SEP-1997;
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                                                                                                                                                                                              O'brien JS;
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The present invention relates to use of a prosaposin-related peptide or derivative, in the production of a medicament for use in preventing or delaying cell death, or in promoting the expression of cell death supporting gene product Bcl-XL. The invention is useful for preventing the death of cells e.g. brain cells, neurons and cardiac muscle cells, in vitro or ex vivo.
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                                                                                                                                                                                                                                                                                          Sadamoto Y;
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                                                                                                                                                                                                                                                                                             Morita F,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 28; 41pp; English.
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                                                                                                                                                                                                                                                                                             Sato K,
                                                                                                                                              99JP-0185155
                                                                                              30-JUN-2000; 2000EP-0305504
                                                                                                                                                                                                                                                                                        Sakanaka M, Tanaka J,
                                                                                                                                                                                                                                                                                                                                        WPI; 2001-204263/21.
                                                                                                                                                                                         (SAKA/) SAKANAKA M.
(TANA/) TANAKA J.
(SATO/) SATO K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 12; Conserv
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                                                                                                                                              30-JUN-1999;
EP1072609-A2
                                                31-JAN-2001,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
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GenCore version 5.1.6

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OM protein - protein search, using sw model

Run on: June 2, 2003, 14:17:59; Search time 16 Seconds

(without alignments)

228.319 Million cell updates/sec
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Title: US-09-780-438C-6
Perfect score: 131
Sequence: 1 XXCEXCEXXXKEXXXXDNNKXEKEXXDXXDKXCXKXX 38
Scoring table: BLOSUM62DX
Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters:

283224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	G	saposin precursor	saposin-C - bovine	qlucosylceramide b	hypothetical prote		=	Pl09 protein - sil	- 2	hypothetical prote		centromere/microtu	probable transglyc	cell wall-binding	hypothetical prote	krueppel-related p	cynarase (EC 3.4.2) E	variant-specific s	UDP-glucose-glycop	sperm tail-specifi	hypothetical prote	hypothetical prote	cell surface glyco	beta-qalactosidase	mismatch repair en	probable AP2 domai	hypothetical prote	1-phosphatidylinos	1-phosphatidylinos
COTATATATA	ΩI	SAHUP	S21770	A32026	T18450	T15674	A28716	T00207	JH0604	T20764	T08778	S41853	T12796	F70031	T33068	A35659	S47096	T12049	T28626	T19214	S51364	T28771	T25911	JC2299	T05687	T01508	G)	T46339	A28822	A28821
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æ	Query Match	100.0	87.0	6.79	56.5	55.7	55.7	54.2	53.4	53.4	52.7	51.9	51.9	51.5	51.1	51.1	51.1	51.1	51,1	20.8	50.8	50.4	50.4	50.4	50.4	50.4	50.0	50.0	50.0	50.0
	Score	131	114	83	74	73	73	71	.70	70	69	68	68	67.5	49	29	67	67	67	66.5	66.5	99	99	99	99	9	65.5		65.5	65.5
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hypothetical prote	Mov-34 protein - m	finger protein HZF	hypothetical prote	protein C33E10.5 [101K malaria antig	hypothetical prote	hypothetical prote	probable transcrip	phenylalanine dehy	probable chloropla	probable membrane	PfEMP2/MESA protei	hypothetical prote	KSI protein - Hydr	hypothetical prote
\$23244	BWMSV4	S47072	S48550	E89751	A29232	T21381	S41017	T52114	JQ0513	E86440	C71610	A56657	T46069	S43193	T19897
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217	321	488	504	588	743	3228	143	165	366	445	2013	126	213	217	219
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49	49	49	49	49	49	49	49.2	49	49	49	49	48	48	48	48
65	65	65	65	65	65	65	64.5	64.5	64.5	64.5	64.5	64	64	64	64
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

Jun

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A; Molecule type: DNA
A; Residues: 307-516 <RE2>
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A; Residues: 59-125 <RES>
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                                                                                                                                                                                                                                                                                                                                                                A; Accession: A32784
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Holtschmidt, H.; Sandhoff, K.; Kwon, H.Y.; Harzer, K.; Nakano, T.; Suzuki, K.
Blol. Chem. 266, 7556-7560, 1991
A;Title: Sulfatide activator protein. Alternative splicing that generates three mRNAs an A;Reference number: S36988; MUID:91210267; PMID:2019586
A;Accession: S36988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŧ
A;Cross-references: GB:J03077; NID:g183230; PIDN:AAA52560.1; PID:g183231
A;Note: alternative splice form 2
R;Hraiwa, M:; O'Brien, J.S.; Kishimoto, Y.; Galdzicka, M.; Fluharty, A.L.; Ginns, E.L.;
Arch. Biochem. Biophys. 304, 110-116, 1993.
A;Title: Isolation, characterization, and proteolysis of human prosaposin, the precursor A;Reference number: S34740; MUID:93311991; PMID:8323276
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A; Realdues: 17-24, 'X', 26 <RON>
A; Realdues: 17-24, 'X', 26 <RON>
A; Experimental source: milk
R; Kretz, K.A.; Carson, G.S.; Morimoto, S.; Kishimoto, Y.; Fluharty, A.L.; O'Brien, J.S.
Proc. Natl. Acad. Sci. U.S.A. 87, 2541-2544, 1990
A; Title: Characterization of a mutation in a family with saposin B deficiency: a glycosy A; Reference number: A35985; MUID:90207231; PMID:2320574
A; Accession: A35985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Residues: 1-240, 'S', 242-259, 261-527 < H03>
A:Cross-references: EMBL: M60286; NID:9337766; PIDN:AAA36596.1; PID:9337767
A:Note: cheroside suffice activator protein mutant MU-6; corresponds to alternative sayonete. cerebroside sulfate activator protein mutant MU-6; corresponds to alternative sayoneme. Blophys. Res. Commun. 181, 286-292, 1991
A:Reference number: PS0330; MUID:92068206; PMID:1958198
A:Accession: PS0330
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A; Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1991
A; Note: cerebroside sulfate activator protein mutant MU-9; corresponds to alternative A; Accession: S36989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Note: sequence from patients with activator-deficient metachromatic leukodystrophy; R;Fuerst, W.; Schubert, J.; Machleldt, W.; Meyer, H.E.; Sandhoff, K.
                                                                                                                                                                                                                                                                                                                                                                                                 ceroid-lipofuscinosis.
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A;Experimental source: lymphoblast
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A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Storage of saposins A and D in infantile neuronal A;Reference number: S36140; MUID:93380576; PMID:8370464 A;Accession: S36140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Wolecule type: protein
A;Residues: 'XX',62,'X',64-65,'X',67-79,'X',81-84 <TYY>
A;Note: saposin A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: protein
A;Residues: 'XXX',413-414,'X',416-428,'X',430-434 <TY2>
A;Note: saposin D
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A; Mesidues: 17-24;165-172;180-189;301-305 (HIR>
R; Tyynelae, J; Palmer, D.N.; Baumann, M.; Haltia,
FEBS Lett. 330, 8-12, 1993
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A;Residues: 213-216,'I',218-221 <KR3>
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A; Residues: 213-221 <KRE>
A; Cross-references: GB:M32221
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A;Status: significant sequence differences
A;Molecule type: mRNA
A;Cross-references: EMBL:J03015
A;Note: this sequence corrected by A41240
A;Note: part of this sequence, including the amino end of the mature protein, was det
R;Kleinschmidt, T.; Christomanou, H.; Braunitzer, G.
Biol. Chem. Hoppe-Seyler 369, 1361-1365, 1988
A;Title: Complete amino-acid sequence of the naturally occurring A(2) activator prote
A;Reference number: S02028; MUD:89207118; PMID:3242555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,Molecule type: protein
A,Residues: 195-259,263-276 <KLE>
A;Residues: 195-259,263-276 <KLE>
R;Fuerst, W.; Machleidt, W.; Sandhoff, K.
Biol. Chem. Hoppe-Seyler 369, 317-328, 1988
A,Title: The precursor of sulfatide activator protein is processed to three different A;Reference number: S00813; MUID:89000190; PMID:3048308
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A. Residues: 314-393 (KLZ>
A. Residues: 314-393 (KLZ>
B. V. Salvioli, R.; Barca, A.; Tatti, M.; Ciaffoni, F.; Maras, B.; Sicilia
J. Biol. Chem. 270, 9953-9960, 1995
A. Title: Structural analysis of saposin C and B. Complete localization of disulfide b
A. Reference number: A57297, MUID:95247790; PMID:7730378
A. Contents: annotation; disulfide bonds; glycosylation
B. Holtschmidt, H.; Sandhoff, R.; Fuerst, W.; Kwon, H.Y.; Schnabel, D.; Suzuki, K.
PEBS Lett. 280, 267-270, 1991
A. Title: The organization of the gene for the human cerebroside sulfate activator pro
A. Reference number: 137264; MUID:91192146; PMID:2013321
Eur. J. Blochem. 192, 709-714, 1990
A;Title: The complete amino-acid sequences of human ganglioside GM2 activator protein
A;Reference number: S13195; MUID:91006165; PMID:2209618
A;Accession: S13196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Readdues: 60-64;86-107;109-119;125-134 <MOR>
A; Readdues: 60-64;86-107;109-119;125-134 <MOR>
Science 241, 1098-1101, 1988
A; Title: Coding of two sphingolipid activator proteins (SAP-1 and SAP-2) by same gene
A; Reference number: A41240; MUID:88321660; PMID:2842863
A; Accession: A41240
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A; Reafdues: 'GSSR',18-259,263-299,'D',301-302,'D',304-527 <OAB>
A; Reafdues: GSSR',18-259,263-299,'D',301-302,'D',304-527 <OAB>
R; Dewji, N.N.; Wenger, D.A.; O'Brien, J.S.
Proc. Natl. Acad Sci. U.S.A. 84, 8652-8656, 1987
A; Title: Nucleoctide sequence of cloned cDNA for human sphingolipid activator protein
A; Reference number: S02289; MUID:88068647; PMID:2825202
                                                                                                                                                                             A,Molecule type: protein
A;Residues: 195.259,263-277 <FUE>
R;Residues: 195.259,263-277 <FUE>
R;Morimoto, S.; Martin, B.M.; Yamamoto, Y.; Kretz, K.A.; O'Brien, J.S.; Kishimoto, Proc. Natl. Acad. Scl. U.S.A. 86, 3389-3393, 1989
A;Fitle: Saposin A: second cerebrosidase activator protein.
A;Reference number: A32784; MUID:89240739; PMID:2717620
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A;Accession: I37264
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A; Residues: 410-487 < FUZ>
R; Rielinschmidt, T.; Christomanou, H.; Braunitzer, G.
Biol. Chem. Hoppe-Seyler 368, 1571-1578, 1987
A; Title: Complete amino-acid sequence and carbohydrate c
A; Reference number: S00226; MUID:88163077; PMID:3442600
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A;Status: translated from GB/EMBL/DDBJ
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Gaps

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A;Cross-references: EMBL:U40797; NID:g1065916; PID:g1065918; PIDN:AAB37550.1; GSPDB:G
A;Experimental source: strain Bristol N2; clone C28C12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N;Alternate names: cerebroside sulfate activator protein; co-beta-glucosidase; componein (SAP); sphingolipid activator protein A2; sulfated glycoprotein 1; sulfatide sulf N;Contains: prosaposin; saposin A; saposin B; saposin C; saposin D C; Species: Rattus norvegicus (Norway rat)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A28716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Collard, M.W.; Sylvester, S.R.; Tsuruta, J.K.; Griswold, M.D.
Biochemistry 27, 4557-4564, 1988
A;Title: Biosynthesis and molecular cloning of sulfated glycoprotein 1 secreted by ra
A;Reference number: A28716; MUID:89000647; PMID:3048385
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A;Note: saposins A and C (SAP-2) activate hydrolysis of glucocerebroside by beta-gluc
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A; Residudes: 1-554 <COLD.
A; Crost-references: GB:M19936; NID:g206904; PIDN:AAA42136.1; PID:g206905
A; Note: parts of this sequence, including the amino end of the mature protein, were d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein C28C12.7 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Secession: T15674
R;Miller, N.
submitted to the EMBL Data Library, November 1995
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                                                                                    A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-419 <LAW>
A;Cross-references: EMBL:AL008970; NID:e1407852; PIDN:CAA15592.1
C;Genetics:
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                                                                                                                                                                                                                                                                                                                                             Length 419;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Description: The sequence of C. elegans cosmid C28C12. A; Reference number: 218387 A; Accession: T15674 A; Status: preliminary; translated from GB/EMBL/DDBJ
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BECKEEYKEDCKDKEEDKKECKDKEEGKKECKEEG 325
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                                                                                                                                                                                                                                                                                                                                                7
submitted to the EMBL Data Library, November 1998
A;Reference number: 218937
A;Accession: T18450
                                                                                                                                                                                                                                                                                                                                          56.5%; Score 74; DB 25.7%; Pred. No. 49; cive 23; Mismatches
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A;Introns: 76/2; 172/3; 210/3; 256/3; 281/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25;
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Best Local Similarity
Matches 9; Conserv
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ses 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-314 <MIL>
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                                                                                                                                                                                                                              A;Map position: 3
A;Introns: 15/3; 169/1
A;Note: C0570c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Gene: CESP: C28C12.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: A28716
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G:Species: Cavia porcellus (guinea pig)
C:Species: Cavia porcellus (guinea pig)
C:Date: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 17-May-1996
C:Accession: A32026
R:Sano, A.; Radin, N.S.; Johnson, L.L.; Tarr, G.E.
J. Biol. Chem. 263, 19597-19601, 1988
A:Title: The activator protein for glucosylceramide beta-glucosidase from guinea pig liv
A;Reference number: A32026 MUID:89066787; PMID:3198642
A;Accession: A32026
A;Molecule type: protein
A;Residues: 1-81 cSAN>
C:Superfamily: saposin; saposin repeat homology
F;1-81/Domain: saposin repeat homology cSAP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Species: Bos primigenius taurus (cattle)
C; Species: Bos primigenius taurus (cattle)
C; Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 31-oct-1997
C; Accession: $21770
B; Sano, A.; Mizuno, T.; Kondoh, K.; Hineno, T.; Ueno, S.; Kakimoto, Y.; Morita, N.
B; Sano, A.; Mizuno, T.; Kondoh, K.; Hineno, T.; Ueno, S.; Kakimoto, Y.; Morita, N.
B; Chim. Biophys. Acta 1120, 75-80, 1992
A; Title: Saposin-C from bovine spleen; complete amino acid sequence and relation between A; Reference number: $21770; MuID:92207994; PMID:1554743
A; Recession: $21770
A; Redecule type: protein
A; Residues: 1-80 cSAN>
C; Superfamily: saposin; saposin repeat homology
                          A;Cross-references: GDB:120366; OMIM:176801
A;Map position: 10q22.1-10q22.1
A;Introns: 83/3; 338/3; 440/1; 480/3
A;Note: defects in this gene may cause variant Gaucher disease, variant Tay-Sachs disease A;Note: list of introns is incomplete
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hypothetical protein C0570c - malaria parasite (Plasmodium falciparum)
c;Species: Plasmodium falciparum
c;Species: Plasmodium falciparum
c;Date: 15-oct-1999 #sequence_revision 15-oct-1999 #text_change 11-Jan-2002
c;Accession: T18450
R;Lawson, D.; Bowman, S.; Barrell, B.
                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                 100.0%; Score 131; DB 1; Length 527; 50.0%; Pred. No. 0.00046;
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Pred. No. 0.52;
                                                                                                                                                                                                                           19; Mismatches
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Best Local Similarity 28.6%;
Matches 10; Conservative 2:
                                                                                                                                                                                                                              Local Similarity 50.09
nes 19; Conservative
  A; Gene: GDB: PSAP; GLBA
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Matches
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A; Pathway: sphingolipid catabolism
A; Note: saposins A and C (SAP-2) activate hydrolysis of glucocerebroside by beta-gluc
A; Note: saposins B (SAP-1) activates hydrolysis of galactocerebroside sulfate by aryls
A; Note: saposin B (SAP-1) activates hydrolysis of sphingomyelln by sphingomyelln phosphodiest
C; Superfamily: saposin; saposin repeat homology
C; Seywords: alternative splicing; glycoprotein; lysosomal storage disease; lysosome;
F; 1-16/Domain: signal sequence #status predicted <SIG>
F; 17-557/Product: prosaposin #status predicted <PRO>
             saposins bind sphingolipids, form hydrophilic complexes and make them
                                                                                                                                                                                                                                                F.55-148/Domain: saposin repeat homology <SAP1>
F.60-143/Product: saposin A *status predicted <SAPA>
F.189-283/Domain: saposin A *status predicted <SAPA>
F.189-283/Domain: saposin repeat homology <SAP2>
F.194-276/Product: saposin Espeat homology <SAP3>
F.313-992/Product: saposin C *status predicted <SAPC>
F.313-992/Product: saposin C *status predicted <SAPC>
F.434-525/Domain: saposin repeat homology <SAPC>
F.440-517/Product: saposin D *status predicted <SAPC>
F.63-138,66-132,94-106,197-273,200-267,229-240,317-390,320-384,348-359,442-515
F.80,214,334,379,459/Binding site: carbohydrate (Asn) (covalent) *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:Z54270; PIDN:CAA91028.1; GSPDB:GN00028; CESP:F11C1.6
A;Experimental source: clone F11C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 18-Feb-2000
C;Accession: T20764
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C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 13-Aug-1999
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A;Introns: 39/3; 50/3; 87/1; 148/2; 190/1; 286/1; 377/3; 417/2; 499/2
C;Superfamily: steroid hormone receptor Ad4BP; erbA transforming protein
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R; Wambutt, R.; Heubner, D.; Mewes, H.W.; Gassenhuber, J.; Wiemann, Submitted to the Protein Sequence Database, May 1999
A; Reference number: 216469
A; Accession: T08778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 557;
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A;Residudes: 1-570 <WANA
A;Cross-references: EMBL:AL050149
A;Experimental source: adult uterus; clone DKFZp586I1520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein DKFZp586I1520.1 - human (fragment)
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53.4%; Score 70; DB 1; Let
n 0%; Pred. No. 1.4e+02;
5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Palmer, S. submitted to the EMBL Data Library, September 1995 A; Reference number: 219321 A; Accession: T20764
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Best Local Similarity 20.09
Matches 7; Conservative
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Best Local Similarity
'-haq 8; Conserve
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P109 protein - silkworm
C;Species: Bombyx mori (silkworm)
C;Date: 22-2-Jan-1999 #sequence_revision 22-Jan-1999 #text_change 21-Jul-2000
C;Accession: T00207
R;Tambunan, J.; Chang, P.K.; Li, H.; Natori, M.
Gene 212, 287-293, 1998
A;Tille: Molecular choning of a cDNA encoding a silkworm protein which contains the cons
A;Reference number: Z14124; MUID:98278844; PMID:9611271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N'Alternate names: cerebroside sulfate activator protein; co-beta-glucosidase; component fain (SAP); sphingolipid activator protein A2; sulfated glycoprotein 1; sulfatide sulfate N; Contains: proseposin; saposin A; saposin B; saposin D; species: Mus musculus (house mouse) C; Species: Mus musculus (house mouse) C; Accession: H0604
R; Tsuda, M.; Sakiyama, T.; Endo, H.; Kitagawa, T.
Biochem. Biophys. Res Commun. 184, 1266-1272, 1992
A; Reference number: JH0604; MUID:92272718; PMID:1590788
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C;Superfamily: sanosin reneat homelow:
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A; Residues: 1-557 <TSU>
A; Residues: 1-557 <TSU>
A; Cross-references: GB:S36200; NID:g249386; PIDN:AAB22175.1; PID:g249387
A; Experimental source: liver
C; Function:
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22.3%; Pred. No. ...
1.00 Mismatches
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F;778-870/Domain: saposin repeat homology <SAP3>
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Best Local Similarity 22.99
Matches 8; Conservative
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Best Local S
Matches 8
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C; Accession: F70031

R; Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Ber C; Ercession: F70031

R; Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Ber C; Eroni, S.; Broulllet, S.; Entani, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; A.; Ehrlich, S.D.; Emmerson, P.T.; Entlan, K.D.; Errington, J.; Fabret, C.; Ferrari, Nature 390, 249-256, 1997

A; Authors: Foulyger, D.; Fritz, C.; Fujlta, M.; Fujlta, Y.; Funa, S.; Galizzi, A.; Galizh, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardino A; Authors: Lauber, J.; Lazarett, V.; Lee, S.M.; Levine, A.; Liu, H.; Msuda, S.; Mau Y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Rose, M.; Sadaie, Y.; Bato, T.; Schleich, S.; Schleich, S.; Schroeter, R.; Scoffone, F.; Sakiguchi, J.; Sekowska, A.; Se akeuchi, M.; Tamakoshi, A.; Tamaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiya T.; Winters, Yolkikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.; Tata, K.; Akterence number: Asparance of the Gram-Positive bacterium Bacillus Subtill A; Reference number: Asparance of the Gram-Positive bacterium Bacillus Subtill A; Reference number: Asparance of the Gram-Positive bacterium Bacillus Subtill A; Reference number: Asparance of the Gram-Positive bacterium Bacillus Subtill A; Reference number: Asparance of the Gram-Positive bacterium Bacillus Subtillation and A; Alther Armance of the Gram-Positive bacterium Bacillus Subtillation and A; Alther Armance and A; Alther Armance A; Althe
                              A;Residues: 1-2285 <KUN>
A;Cross-references: GB:299115; GB:AL009126; NID:92634478; PIDN:CAB14053.1; PID:e11835
A;Experimental source: strain 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:299121; GB:AL009126; NID:92635827; PIDN:CAB15485.1; PID:e11861
A;Experimental source: strain 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cell wall-binding protein homolog yvcE - Bacillus subtilis
C;Species: Bacillus subtilis
C;Date: 05-Dec-1997 *sequence_revision 05-Dec-1997 *text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ï
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.9%; Score 68; DB 2; I larity 34.4%; Pred. No. 7.6e+02; Conservative 17; Mismatches 4;
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Best Local Similarity 28.2%
Matches 11; Conservative
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Matches 11; Conserva
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A; Residues: 1-473 <KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
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T33068
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C; Date: 31-Mar-1922 #sequence_revision 14-Sep-1994 #text_change 26-May-2000
C; Accession: Sale443; S14443, S1440
C; Accession: S41853; S4443; S1440
Mol. Cell. Biol. 13, 4884-4893, 1993
A; Title: An essential yeast protein, CBFSp, binds in vitro to centromeres and microtubul A; Reference number: S41853; MUID:93330283; PMID:8336724
A; Molecule type: DNA
A; Residues: 1-483 AJA>
A; Cross-references: EMBL:L12351; NID:9311096; PIDN:AA34473.1; PID:9311097
A; Residues: 36-45; 142-149; 168-175; 385-401 AJI2>
A; Residues: 36-45; 142-149; 168-175; 385-401 AJI2>
B; Wohldmann, P; EMBL Data Library, November 1994
A; Description: The sequence of S. cerevisiae cosmid 9470.
A; Molecule type: DNA
A; Residues: S5144
A; Description: S5420
A; Molecule type: DNA
A; Residues: BMB:UJ246; NID:9577192; PIDN:AAB67463.1; PID:9577203; GSPDB:GN0001
A; Cross-references: EMBL:UJ246; NID:9577192; PIDN:AAB67463.1; PID:9577203; GSPDB:GN0001
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C; Accession: T12796; A6991
R; Lazarevic, V.; Duesterhoeft, A.; Soldo, B.; Hilbert, H.; Mauel, C.; Karamata, D.
R; Lazarevic, V.; Duesterhoeft, A.; Soldo, B.; Hilbert, H.; Mauel, C.; Karamata, D.
R; Lazarevic, V.; Duesterhoeft, A.; Soldo, B.; Hilbert, H.; Mauel, C.; Karamata, D.
A; Reference number: 217583
A; Reference number: 217583
A; Reference number: 217583
A; Reference number: 217583
A; Residues: 1-2285 < LAZ>
A; Residues: 1-2285 < LAZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       centromere/microtubule-binding protein CBF5 [validated] - yeast (Saccharomyces cerevisia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
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                                                                                                                      Length 570;
                                                                                                Score 69; DB 2; Lung
Pred. No. 1.8e+02;
---has 5; Indels
                                                                                                                                                                                                                                                                                                                                          4 EXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N.Alternate names: protein L9470.11; protein YLR175w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1::||::|::|::|::|422 ETEKEEVKEDKKEKKEKKEK 452
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                                                                                                                                                                                                      21; Mismatches
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A;Cross-references: SGD:S0004165; MIPS:YLR175w
A;Map position: 12R
C;Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;434-463/Region: Lys-Lys-Glu/Asp repeats
                                                                                                                      52.7%;
25.7%;
                                                                                                                                                                                                              Conservative
                                                                          Ouery Match
Best Local Similarity
Local 9; Conserve
                              A; Note: DKFZp58611520.1
C;Genetics:
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Krueppel-related protein H-plk - human C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 28-Sep-1990 #sequence_revision 18-Nov-1992 #text_change 01-Dec-2000
C;Accession: A35659
R;Rato, N.; Shimotohno, K.; VanLeeuwen, D.; Cohen, M.
Mol. Cell. Biol. 10, 4401-4405, 1990
A;Title: Human proviral mRNAs down regulated in choriocarcinoma encode a zinc finger pro A;Reference number: A35659; MUID:90318410; PMID:2115127
hypothetical protein C35E7.9 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 29-Oct-1999
C;Accession: T33068
E;Graves, T.; McDonald, R.
Submitted to the EMBL Data Library, May 1998
A;Description: The sequence of C. elegans cosmid C35E7.
A;Reference number: Z21278
A;Reference number: Z21278
A;Reference number: Z1278
A;Reference: FMBL:AF067216; PIDN:AAC17524.1; GSPDB:GN00019; CESP:C35E7.9
A;Experimental source: strain Bristol N2; clone C35E7
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A.Molecule type: mRNA
A.Residues: 1-427 cKAI>
A.Residues: 1-527 cKAI>
A.Residues: 1-527 cKAI>
C.Coss.references: GB:M55422; NID:g184342; PIDN:AAA36010.1; PID:g184343
C.Superfamily: zinc finger protein ZFP-36; LIM metal-binding repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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51.1%; Score 67; DB 2; Length 427;
Best Local Similarity 21.1%; Pred. No. 2.1e+02;
Matches 8; Conservative 22; Mismatches 8; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 301;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 51.1%; Score 67; DB 2; Length 301 Best Local Similarity 31.2%; Pred. No. 1.6e+02; Matches 10; Conservative 19; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A)Gene: CESP:C35E7.9
A;Map position: 1
A;Introns: 30/3; 193/1; 236/2
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Search completed: June 2, 2003, 14:20:21 Job time: 17 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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OM protein - protein search, using sw model

June 2, 2003, 14:16:28; Search time 11 Seconds (without alignments) 143.282 Million cell updates/sec Run on:

US-09-780-438C-6 131 1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38 Title: Perfect score: Sequence:

Scoring table:

BLOSUM62DX Gapop 10.0 , Gapext 0.5

112892 seqs, 41476328 residues Searched:

112892 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt_40;* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	h proa	Ω	cavia		rattus	Q61207 mus musculu	Q19345 caenorhabdi	Q96pe6 homo sapien	-					Q9nq66 homo sapien		P30652 caenorhabdi	P26516 mus musculu	Q14585 homo sapien	Q12460 saccharomyc		P22620 plasmodium			P38978 hydra atten	013473 kluyveromyc	075362 homo sapien		P46797 thermotoga	P21016 vaccinia vi	P17677 homo sapien	P40782 cynara card	5928 homo saj	101
SUMMARIES	GI.	ρ,	SAP_BOVIN	SAP_CAVPO	SAP_CHICK	SAP_RAT	SAP_MOUSE	NH25_CAEEL	ZIM3_HUMAN	CBF5_YEAST	YVCE_BACSU	MST2_DROHY	MSH6_ARATH		PIB1_HUMAN	PIB1_RAT	YOW6_CAEEL	PSD7_MOUSE	Z345_HUMAN	SIK1_YEAST	PRD5_HUMAN	ABRA_PLAFC	ZF25_HUMAN .	DHPH_THEIN	KS1_HYDAT	CBF5_KLULA	Z217_HUMAN	A2M2_MOUSE	FER_THEMA	VF07_VACCC	NEUM_HUMAN	CYP1_CYNCA	Z141_HUMAN	CBF5_CANAL
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	Length		525	81	518	554	557	572	472	483	473	1391	1324	1216	1216	1216	180	321	488	204	630	743	783	366	217	474	1048	1451	9	92	238	7	474	479
dР	Query	100.0	89.3	67.9	9.59	55.7	53.4	-	51.9		-:		٠.		٠.				49.6					49.2			•	œ.	∞ .	œ		48.1	48.1	48.1
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P42210 hordeum vul P16374 mus musculu Q9uju3 homo sapien P10251 mycoplasma Q63957 streptococc Q53957 streptococc Q9uk13 homo sapien P13816 plasmodium P13828 plasmodium Q15911 homo sapien	
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ALIGNMENTS

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                                                                                                                                                                                                                                                                                                              SEQUENCE OF 195-274.

MEDLINE-89207118; PubMed-3242555;

Kleinschmidt T., Christomanou H., Braunitzer G.;

Complete amino-acid sequence of the naturally occurring A2 activator protein for enzymic sphingomyelin degradation: identity to the sulfatide activator protein (SAP-1).";

Biol. Chem. Hoppe-Seyler 369:1361-1365(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-88163077; PubMed-3442600; Kleinschmidt T., Christomanou H., Braunitzer G.; "Complete amino-acid sequence and carbohydrate content of the naturally occurring glucosylceramide activator protein (Al activator) absent from a new human Gaucher disease variant."; Biol. Chem. Hoppe-Seyler 368:1571-1578(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fluharty A.L., Lombardo C., Louis A., Stevens R.L., Whitelegge J., Waring A.J., To T., Fluharty C.B., Faull K.F.; "Preparation of the cerebroside sulfate activator (CSAct or saposin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-89000190; PubMed-3048308;
Furst W., Machleidt W., Sandhoff K.;
"The precursor of sulfatide activator protein is processed to three
                                                                                                                                                Hill F., O'Brien J.S.;
"Molecular cloning of the sphingolipid activator protein-1 (SAP-1), the sulfatide sulfatase activator.";
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*Isolation and characterization of prosaposin from human milk.";
Blochem. Blophys. Res. Commun. 181:286-292(1991).
                                                Morimoto S., Martin B.M., Yamamoto Y., Kretz K.A., O'Brien J.S.,
                                                                                                                                      Dewji N.N., Wenger D.A., Fujibayashi S., Donoviel M., Esch F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PARTIAL SEQUENCE (SAPOSIN B), AND STRUCTURE OF CARBOHYDRATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRÜCTURE OF CARBOHYDRATE ON ASN-215.
MEDLINE-21110404; PubMed-11180632;
Faull K.F., Johnson J., Kim M.J., To T., Whitelegge J.P.,
                                                                          "Saposin A: second cerebrosidase activator protein.";
Proc. Natl. Acad. Sci. U.S.A. 86:3389-3393(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-89025876; PubMed-2845979;
Morlincto S., Martin B.M., Kishimoto Y., O'Brien J.S.;
"Saposin D: a sphingomyellnase activator.";
Blochem. Biophys. Res. Commun. 156:403-410(1988).
 Proc. Natl. Acad. Sci. U.S.A. 84:8652-8656(1987).
                                                                                                                                                                                       ochem. Biophys. Res. Commun. 134:989-994(1986).
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                         PARTIAL SEQUENCE OF 60-142.
MEDLINE-89240739; Pubmed-2717620;
                                                                                                               SEQUENCE OF 195-263 FROM N.A. MEDLINE-86130593; Pubmed-2868718;
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                                                                                                                                                                                                                SEQUENCE OF 195-274.
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                                                              Kishimoto Y.;
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porcine kidney and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cerebroside sulfate by arylsulfatase A (EC 3.1.6.8), GM1 apaginglishes by beta galactosidase (EC 3.2.1.23) and globotriacosylceramide by alpha galactosidase A (EC 3.2.1.22). Saposin B forms a solubilizing complex with the substrates of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hum. Mutat. 4:233-242(1994).
-!- FUNCTION: The lysosomal degradation of sphingolipids takes place
                                                                                                                                                                                                                                                                                                            Faull K.F., Whitelegge J.P., Higginson J., To T., Johnson J., Krutchinsky A.N., Standing K.G., Waring A.J., Stevens R.L., Fluharty C.B., Fluharty A.L.;
"Cerebroside sulfate activetor protein (Saposin B): chromatographic and electrospray mass spectrometric properties.";
J. Mass Spectrom. 34:1040-1054(1999).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-90147748; PubMed-2302219; Raffi M.A., Zhang X.-L., Degala G., Wenger D.A.; Pang X.-L., Degala G., Wenger D.A.; phang X.-L., matation in sphingolipid activator protein-1 mRNA in patients with a variant form of metachromatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kretz K.A., Carson G.S., Morimoto S., Kishimoto Y., Fluharty A.L., O'Brien J.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT MLD SER-241, SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Sulfatide activator protein. Alternative splicing that generates three mRNAs and a newly found mutation responsible for a clinical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIINE-99170731; PubMed-7866401;
Gleselmann V., Zlotogora J., Harris A., Wenger D.A., Morris C.P.;
"Molecular genetics of metachromatic leukodystrophy.";
Hum. Mutat. 4:233-242(1994).
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FUNCTION: Saposin B stimulates the hydrolysis of galacto-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-91210267; PubMed-2019586;
Holtschmidt H., Sandhoff K., Kwon H.Y., Harzer K., Nakano T.,
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Stevens R.L., Fluharty C.B., Fluharty A.L.;
"Structure of the asparagine-linked sugar chains of phuman urine cerebroside sulfate activator protein.";
J. Mass Spectrom. 35:1416-1424(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         deficiency: a glycosylation site defect.";
Proc. Natl. Acad. Sci. U.S.A. 87:2541-2544(1990).
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MEDLINE-90207231; Pubmed-2320574;
                                                                                                                                                                                                                                    TISSUE-Urine;
MEDLINE-99441404; PubMed-10510427;
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MEDLINE-92207994; PubMed-1554743;
Sano A., Mizuno T., Kondoh K., Hineno T., Ueno S.-I., Kakimoto Y.,
Namorita N.;
Saposin-C from bovine spleen; complete amino acid sequence and
relation between the structure and its biological activity.";
Blochim. Blophys. Acta 1120:75-80(1992).
I- FUNCTION: THE LYSOSOMAL DEFENDATION OF SPHINGOLIPIDS TAKES PLACE
STATE SEQUENTIAL ACTION OF SPECIFIC HYDROLASES. SOME OF THESE
ENZYMES REQUIRE SPECIFIC LOW-MOLECULAR MASS, NON-ENZYMIC PROFINS:
THE SPHINGOLIPIDS ACTIVATOR PROTEINS (COPROTEINS) (BY SIMILARITY).
C-1- FUNCTION: SAPOSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF
GLUCOSYLCERRAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
CALACTOSYLCERAMIDE BY BETA-CALACTOSYLCERAMIDASE (EC 3.2.1.46).
CARACTOSYLCERAMIDE BY BETA-CALACTOSYLCERAMIDASE (EC 3.2.1.46).
CARACTOSYLCERAMIDE BY BETA-CALACTOSYLCERAMIDASE (EC 3.2.1.46).
CARACTOSYLCERAMIDE BY BETA-CALACTOSYLCERAMIDASE (EC 3.2.1.46).
CALACTOSYLCERAMIDE BY BETA-COMBINING WITH THE BIXZYME AND ACTIVATED COMPLEX, RATHER THAN BY SOLUBLIZING
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SAPOSIN B FORMS A SOLUBILIZING COMPLEX WITH THE SUBSTRATES OF THE SPHINOCLIPID HYDROLASES (BY SIMILARITY).
-1- FUNCTION: SAPOSIN D IS A SPECIFIC SPHINGOMYELIN PHOSPHODIESTERASE ACTIVATOR (EC 3.1.4.12) (BY SIMILARITY).
-1- SUBGRIT: SAPOSIN B IS A HOMODIMER (BY SIMILARITY).
-1- SUBGRILULAR LOCATION: LYSOSOMB1.
-1- PTH: THIS PRECISOR IS PROTEDLY PROCESSED TO 4 SMALL PEPTIDES, WHICH ARE SIMILARITY).
-1- PTH: THIS PRECISOR IS PROTEINS (BY SIMILARITY).
-1- PTH: THIS PRECISOR IS PROTEINS (BY SIMILARITY).
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P26779; OSNG4;
P26779; CRC and and a control of the control of contro
                                                                                                      Gaps
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Sukaryota: Metazooa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
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                  100.0%; Score 131; DB 1; Length 524; 50.0%; Pred. No. 0.00037; tive 19; Mismatches 0; Indels (
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Azuma N., Yoshida K.;
"RT-PCR cloning of bovine prosaposin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                       1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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                                                                                              Conservative
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les 19; Conserv
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use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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01-FEB-1991 (Rel. 17, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Saposin C (CO-beta-glucosidase) (Glucosylceramidase activator)
(Sphingolipid activator protein 2) (SAP-2).
Cavia porcellus (Guinea pig).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
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-> S (IN REF. 1).
293AFCOFB9C4FA99 CRC64;
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SAPOSIN A.
SAPOSIN B.
SAPOSIN C.
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SAPOSIN-LIKE TYPE B
SAPILARITY
BY SIMILARITY
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MOPK -> IRIR.
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                                                                                                                   EMBL; AB036791; BAA95677.1; -. PIR; S21770; S21770. InterPro; IPR0003119; SapA. InterPro; IPR0000004; SapB. Pfam; PF02199; SAPA; 2. SMART; SM00162; SAPB; 4.
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                                                                                                                                                                                                                                                                                                           Signal; Glycoprotein; SIGNAL 1
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525 AA;
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TISSUE-Liver;
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Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.

- FUNCTION: THE LYSOSOMAL DEGRADATION OF SHURGOLIPIDS TAKES PLACE
BY THE SEQUENTIAL ACTION OF SPECIFIC HOROLASES. SOME OF THESE
ENZYMES REQUIRE SPECIFIC LOW-MOLECULAR MASS, NON-ENZYMIC PROTEINS:
THE SPHINGOLIPIDS ACTIVATOR PROTEINS (COFFOTEINS) (BY SIMILARITY).

- IF SPHINGOLIPIDS ACTIVATOR PROTEINS (COFFOTEINS) (BY SIMILARITY).

- IF GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND
GALACTOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.46).

SAPOSIN-C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC
LIPID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
THE SUBSTRATE (BY SIMILARITY).
                                                                                 sequence.";
J. Biol. Chem. 263:19597-19601(1988).
J. Biol. Chem. 263:19597-19601(1988).
J. Biol. Chem. 28POSIN A AND SAPOSIN C STIMULATE THE HYDROLYSIS OF GLUCOSYLCERAMIDE BY BETA-GLUCOSYLCERAMIDASE (EC 3.2.1.45) AND GALACTOSYLCERAMIDE BY BETA-GLACTOSYLCERAMIDASE (EC 3.2.1.46).
SAPOSIN-C APPARENTLY ACTS BY COMBINING WITH THE ENZYME AND ACIDIC LIPID TO FORM AN ACTIVATED COMPLEX, RATHER THAN BY SOLUBILIZING
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TISSUE-Brain, and Liver;

MEDLINE-98129745; Pubmed-9461526;

Azuma N., Seo H.-C., Lie O., Fu Q., Gould R.M., Hiraiwa M., Burt D.W.,

Paton I.R., Morrice D.R., O'Brien J.S., Kishimoto Y.;

"Cloning, expression and map assignment of chicken prosaposin.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                    Sano A., Radin N.S., Johnson L.L., Tarr G.E.; "The activator protein for glucosylceramide beta-glucosidase from guinea plg liver. Improved isolation method and complete amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2001 (Rel. 40, Created) .
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Proactivator Polypeptide precursor [Contains: Saposin A; Saposin B; Saposin C; Saposin D].
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 89; DB 1; Length 81;
Pred. No. 0.24;
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N-LINKED (GLCNAC. ..).
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
E564CE1F0A292596 CRC64;
                                                                                                                                                                                                                                          THE SUBSTRATE.
-1- SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
PIR; A32026; A32026.
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23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Sphingolipid metabolism.
DOMAIN 1 81 SAPOSIN-1.
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#EDLINE-89066787; PubMed-3198642;
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28.6%;
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                                                                                                                                                                                                                                                                                                          HSSP; P42210; 1QDM.
InterPro; IPR000004; SapB.
ProDom; PD001732; SapB; 1.
SMART; SM00118; SAPB; 1.
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Best Local Similarity 28.67
Matches 10; Conservative
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78
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013035;
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CEREBROSIDE SULFATE BY ARYLSULFATASE A (EC 3.1.6.8), GM1
CANGLIOSIDES BY BETA-GALACTOSIDASE (EC 3.2.1.23) AND
GLOBOTRIAOSYLCERAMIDE BY ALPHA-GALACTOSIDASE A (EC 3.2.1.22).
SAPOSIN'B FORMS, A SOLUBILIZING COMPLEX WITH THE SUBSTRATES OF THE
SPHINOCLIPID HYDROLASES (BY SIMILARITY).

C -1- FUNCTION: SAPOSIN D IS A SPECIFIC SPHINGOMELIN PHOSPHODIESTERASE
ACTIVATOR (EC 3.1.4.12) (BY SIMILARITY).

C -1- SUBGUIT: SAPOSIN D IS A HOMODIMER (BY SIMILARITY).

C -1- SUBCLILIAR LOCATION: LYSOSOMEL (BY SIMILARITY).

C -1- PUNCTIONS SAPOSIN B SAPOSIN PROCESSED TO 4 SMALL
PEPTIDES, WHICH ARE SIMILAR TO EACH OTHER AND ARE SPHINGOLIPID
HYDROLASE ACTIVATOR PROTEINS (BY SIMILARITY).

C -1- SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.

C -1- SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
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..) (POTENTIAL).
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SWART; SW00118; SAPB; 4.
Signal; Glycoprotein; Lysosome; Sphingolipid metabolism; Repeat;
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E -> D (IN REF. 2).
BB03000E891C3963 CRC64;
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SAPOSIN-LIKE TYPE B
SY SIMILARITY.
BY SIMILARITY.
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SAPOSIN A.
SAPOSIN B.
SAPOSIN C.
SAPOSIN D.
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EMBL; AF108656; AAF05899.1; -.
InterPro; IPR0000119; SapA.
InterPro; IPR000004; SapB.
Pfam; PF02199; SAPA; 2.
ProDom; PD001732; SapB; 4.
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llarity 31.4%;
Conservative 21
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SIGNAL
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Best Local Similarity
Matches 11; Conserv
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                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-Testicle;
MEDLINE-96175245; PubMed-8601692;
Morales C.R., El-Alfy M., Zhao Q., Igdoura S.A.;
"Expression and tissue distribution of rat sulfated glycoprotein-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Testis;
MEDLINE-96128541; PubMed-8573994;
Morales C.R., El-Alfy M., Zhao Q., Igdoura S.A.;
Morales Lalfy M., Zhao Q., Igdoura S.A.;
Molecular role of sulfated glycoprotein-1 (SGP-1/prosaposin) in Sertoli cells.";
                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
TISSUE-Sertoli cells;
MEDLINE-89000647; PubMed-3048385;
Collard M.W., Sylvester S.R., Tsuruta J.K., Griswold M.D.;
"Biosynthesis and molecular cloning of sulfated glycoprotein 1 serated by rat Sertoli cells: sequence similarity with the 10.kilodalton precursor to sulfatide/GMI activator.";
Biochemistry 27:4557-4564(1988).
                                    SAP_RAT STANDARD; PRT; 554 AA. P10960 (62284; 064190; 01-JUL-1989 (Rel. 11, Created) (01-JUL-1989 (Rel. 11, Last sequence update) (16-OCT-2001 (Rel. 40, Last annotation update) Sulfated glycoprotein 1 precursor (SGP-1) (Prosaposin).
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SAPOSIN-LIKE TYPE B 1.
SAPOSIN-LIKE TYPE B 2.
SAPOSIN-LIKE TYPE B 3.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE B 4.
SAPOSIN-LIKE TYPE B 4.
BY SIMILARITY.
BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Histol. Histopathol. 10:1023-1034(1995).
                                                                                                                                                                            Rattus norvegicus (Rat).
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RESULT 5
                    SAP_RAT
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BY SIMILARITY.
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
P-LINKED (GLCNAC. ..) (POTENTIAL).
P-L (IN REF. 2 AND 3).
D-E (IN REF. 2 AND 3).
I-> W (IN REF. 3).
S-> M (IN REF. 3).
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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MEDILINE-96084310; PubMed-8565332;
Cao Q.P., Crain W.R.;
"Expression of SGP-1 mRNA in preimplantation mouse embryos.";
Dev. Genet. 17:263-271(1995).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 554;
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Zhao Q.Q., Hay N.N., Morales C.R.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
-! SUBCELLUIAR LOCATION: Extracellular.
-! SIMILARITY: CONTAINS 2 SAPOSIN A-TYPE DOMAINS.
-! SIMILARITY: CONTAINS 4 SAPOSIN B-TYPE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
SAP_MOUSE

LD SAP_MOUSE

TO SAP_MOU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DFE3F3A3A0520C6B CRC64;
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Tauda M., Sakiyama T., Endo H., Kitagawa T.,
"The primary structure of mouse saposin.".
Blochem. Blophys. Res. Commun. 184:1266-1272(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPCDICKTVVTEAGNLLKDNATEEEILHYLEKTCA 95
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 73; DB 1;
Pred. No. 40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.7%; Sco. 22.9%; Pred. No. 40, 22.9%; Pred. Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61123 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554 AA;
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wes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
     M125_CABEL STANDARD; PRT; 572 AA. 019345; Q9NJ95; Q9NJ97; 30-MAY-2000 (Rel. 39, Created) 30-MAY-2000 (Rel. 39, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Nuclear hormone receptor family member nhr-25 NHR-25 OR FILCI.6.
                                                                                       Rhabditidae; Peloderinae; Caenorhabditis
                                                                     Caenorhabditis elegans.
                                                                                                                SEQUENCE FROM N.A.
                                                                                                NCBI_TaxID=6239;
                                                                                                                                   Palmer
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                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
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G -> D (IN REF. 3).

I -> O (IN REF. 3).

I -> O (IN REF. 3).

A -> T (IN REF. 3).

A -> T (IN REF. 3).

A -> R (IN REF. 3).

A -> R (IN REF. 2).
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-> P (IN REF. 4).
134593E20499E35E CRC64;
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BY SIMILARITY.
N-LINED (GLCNAC. . .) (.
N-LINED (GLCNAC. . .) (.
N-LINED (GLCNAC. . .) (.
N-LINED (GLCNAC. . .) (.)
                                                                                                                                                  BY SIMILARITY.
SULFATED GLYCOPROTEIN 1.
                                                                                                                                                                SAPOSIN-LIKE TYPE A I. SAPOSIN-LIKE TYPE B I SAPOSIN-LIKE TYPE B 2 SAPOSIN-LIKE TYPE B 3 SAPOSIN-LIKE TYPE B 4 SAPOSIN-LIKE TYPE B 4
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L -> W (IN REF. 3).
L -> W (IN REF. 2).
MISSING (IN REF. 2).
F -> L (IN REF. 2).
F -> L (IN REF. 2).
AL -> GV (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                          Q -> E (IN REF. 2).
I -> V (IN REF. 3).
MISSING (IN REF. 2).
MS -> SA (IN REF. 3).
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                                                                         MGD; MGI:97783; PSBQ.
InterPro; IPR003119; SapA.
InterPro; IPR003119; SapB.
Pram, PF02199; SAPA; 2.
ProDom; PD001732; SapB; 4.
SMART; SM00118; SAPB; 4.
SUGNAL
SIGNAL
I 16
SY SIMILARITY
CHAIN
I 557
SULFATED GLYCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61422 MW;
                                          EMBL; S36200; AAB22175.1; -. EMBL; S71616; AAB31059.1; -. EMBL; U27340; AAA92567.1; -. EMBL; U57999; AAB02695.1; -.
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393
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557 AA;
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                                                                                                                                                                                                                                                                              Gaps
                                                              Pfam; PF00105; Zf-C4; Z.
Print PF00105; Zf-C4; Z.
Print PF000105; Zf-C4; Z.
Probom; PD000035; Zf-C4steroid; 1.
SWART; SW00399; ZnF_C4; 1.
SWART; SW00399; ZnF_C4; 1.
PROSITE; PS00031; NUCLEAR_RECEPTOR; 1.
Receptor; Transcription regulation; DNA-binding; Nuclear protein;
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MISSING (IN ISOFORM BETA).
F -> L (IN REF. 2; AAF67039)
F -> O (IN REF. 2; AAF67039);
D3092AE533092D7A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2inc-finger; Alternative splicing; Developmental protein.
bNa_BIND 18
                                      Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Score 70; DB 1;
; Pred. No. 75;
23; Mismatches 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF179214; AAF67038.1; -.
EMBL; AF179215; AAF67039.1; -.
EMBL; AF179216; AAF67040.1; -.
HSSP; P19793; ZNLL.
WOTMPEP; F1101.6; CE03191.
InterPro; IPR0006356; HORMONE_IEC_11g.
InterPro; IPR001628; Znf_C48teroid.
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540
572 AA;
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Best Local Similarity
Matches 8; Conserv
STRAIN-Bristol N2;
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1 XXCEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCX 35

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Local Similarity
tes 7; Conserv

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NCBI_TaxID-4932;
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                                                                                CBF5_YEAST
                              RESULT 9
CBF5_YEAST
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PROSITE; PS50157; ZINC_FINGER_C2H2_2; 11.
Transcription regulation; Zinc-finger; Metal-binding; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE-21459118; PubMed-11543637;
Kim J., Bergmann A., Wehrl E., Lu X., Stubbs L.;
Kim J., Bergmann A., Wehrl E., Lu X., Stubbs L.;
Imprinting and evolution of two Kruppel-type zinc-finger genes, ZIM3 and ZMF264, located in the PEG3/USP29 imprinted domain.";
Genomics 77:91-96(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -1- SUBCELLULAR LOCATION: Nuclear (Probable).
-1- SIMILARITY: BELONGS TO THE KRUEPPEL FAMILY OF C2H2-TYPE ZINC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C2H2-TYPE.
755279B78653F286 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- FUNCTION: May function as a transcription factor.
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1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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                              15-JUN-2002 (Rel. 41, Created)
15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
21nc finger imprinted 3.
                                                                                                                                                                                    PRT; 472 AA
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C2H2-TYPE.
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C2H2-TYPE.
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C2H2-TYPE.
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InterPro; IPR0019909; RRAB.
InterPro; IPR000822; Znf_C2H2.
Pfam; PF00096; zf-C2H2; 11.
Pfam; PF01352; KRAB; 1.
PROSITE; PS50805; KRAB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata;
Mammalla; Eutheria; Primates;
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                                                                                                                                                                                    STANDARD;
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DOMAIN
BOMAIN
NOMAIN
NOMBER
BC
N_FING
ZN_FING
ZN_
                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
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les 8; Conserva
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472 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                       Zinc finger
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Q96PE6;
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZN_FING
                                                                                                                                                           ZIM3_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                 Johnston M., Hiller L., Riles L., Albermann K., Andre B., Ansorge W., Benes V., Bruckner M., Delius H., Dubois E., Dusterhoft A., Benes V., Bruckner M., Goffeau A., Hebling U., Heumann K., Heuss-Neitzel D., Hilbert H., Hilger F., Kleine K., Kotter P., Louis E.J., Messenguy F., Mewes H.-W., Miosga T., Mostl D., Mueller-Auer S., Nentwich U., Obermaler B., Pitravandi E., Pohl T.M., Scherens B., Scholler P., Schwarz S., Underwood A.P., Urrestarazu L.A., Vandenbol M., Verbasselt P., Urrestarazu L.A., Vandenbol M., Verbasselt P., Weiner H., Yolckaert G., Voss H., Wanbutt R., Wedler E., Wedler H., Zimmermann F.K., Zollner A., Hanl J., Hoheisel J.D.;
"The nucleotide sequence of Saccharomyces cerevisiae chromosome XII.";
                             01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Centromere/microtubule binding protein CBF5 (Centromere-binding factor
5) (Nucleolar protein CBF5) (P64').
CBF5 OR YLR175W OR L9470.11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nature 387:87-90(1997).

-1- FUNCTION: BINDS IN VITRO TO CENTROMERES AND MICROTUBULES. IT IS A CENTROMERE DNA-CEPT3-BINDING FACTOR AND IS INVOLVED IN MITOTIC CHROMOSOME SEGREGATION. IT IS SESENTIAL FOR CELL GROWTH. MAY BE IN SOME WAY ASSOCIATED WITH THE CBF3 110 KDa SUBUNIT (CBF3A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -1- SUBCELLULAR LOCATION: Nuclear; nucleolar.
                                                                                                                                                                                                                                                             Jiang W., Middleton K., Yoon H.-J., Fouquet C., Carbon J.; "An essential yeast protein, CBF5p, binds in vitro to centromeres and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                           Saccharomycetales; Saccharomycetaceae; Saccharomyces.
483 AA.
                                                                                                                                                                                                                            SEQUENCE FROM N.A., AND PARTIAL SEQUENCE. MEDLINE-93330283; PubMed-8336724;
                                                                                                                                                                                                                                                                                                                  Mol. Cell. Biol. 13:4884-4893(1993).
PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR002501; TruB_N.
InterPro; IPR004521; Unchar_dom_2.
Pfam; PPO1472; PUR; I.
Pfam; PF01509; TruB_N; I.
                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-S288c / AB972;
MEDLINE-97313267; PubMed-9169871;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; S41853; S41853.
SGD; S0004165; CBF5.
InterPro; IPR004802; Cbf5.
InterPro; IPR002478; PUA.
STANDARD;
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                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-71 FROM N.A.
MEDLINE-89108019; PubMed-3145906;
Smith H., de Jong A., Bron S., Venema G.;
"Characterization of signal-sequence-coding regions selected from the
                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51.5%; Score 67.5; DB 1; Length 473; 28.2%; Pred. No. 1e+02;
                                                                            51.9%; Score 68; DB 1; Length 483; 32.3%; Pred. No. 94;
                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5; Indels
                                                                                                                                                                                                                                                                 Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus
                                                                                                                                                                                                                                                                                                                          Submitted (APR-1997) to the EMBL/GenBank/DDBJ databases
                                                         D356B39FDCC32E2D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    473 AA; 51033 MW; AF544B030E683038 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 XXCEXCEXXXKEXXKXXDN-NKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EVASSIEAKEKELTELQENQSKIEKELKDINDKALDTSN
                                                                                                                                                                                                                                                                                                                                                                                                       -1 - SIMILARITY: BELONGS TO PEPTIDASE FAMILY C40
                                                                                                                                                                                  YYCE_BACSU STANDARD; PRT; 473 AA. P40767; 006569; 01-FEB-1995 (Rel. 31, Created) 01-FEB-1995 (Rel. 39, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Hypothetical protein yyce (PSPA2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 1e+02;
22; Mismatches
                                                                                                                            8 XXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT; 1391 AA
                                                                                              19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein; Complete proteome. ACT_SITE 377 377 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL: M22901; AAA22817.1; ALT_FRAME.
Subfillist; BG11023; YVCE.
InterPro; IPRO0064; NLPC_P60.
Pfam; PF00877; NLPC_P60: 1.
                                               463 1(
54704 MW;
                                                                                                                                                                                                                                                                                                                                                                                     Bacillus subtilis chromosome.";
Gene 70:351-361(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; Z94043; CAB08053.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z99121; CAB15485.1;
                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
 448
451
457
457
446
449
452
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461
481
483
AA;
                                                                                     Local Similarity
es 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                       Bacillus subtilis
                                                                                                                                                                                                                                                                           NCBI_TaxID-1423;
                                                                                                                                                                                                                                                                                                          STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MST2_DROHY
ID MST2_DROHY
                                               REPEAT
SEQUENCE
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                                                                             Query Match
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                   REPEAT
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REPEAT
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YVCE_BACSU
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Matches
                                                                                               Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -i- DOMAIN: THE PREDOMINANT STRUCTURE IS ALPHA-HELICAL.
-i- POLYMORPHISM: LENGTH POLYMORPHISMS EXIST BETWEEN DIFFERENT
STRAINS, MOST LIKELY CAUSED BY LENGTH VARIATIONS WITHIN THE TANDEM
REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., AND CHARACTERIZATION.
MEDLINE=95045538; PubMed=7957199;
Neesen J., Padmanabhan S., Buenemann H.;
Tandemly arranged repeats of a novel highly charged 16-amino-acid motif representing the major component of the sperm-tall-specific axoneme-associated protein family Dhmst101 form extended alpha-heiled rods within the extremely elongated spermatozoa of
                                                                                                                                                    Drosophija hydei (Fruit fly).
Sukaryota, Metazoa; Arthropda; Mandibulata; Pancrustacea; Hexapod
Insecta: Pteryota; Neoptera; Endopteryota; Diptera; Brachycera;
Muscomorpha; Ephydroldea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-cv. Landsberg erecta;
Till S., Granat S., Parnell L., Kaplan N., Hoffman J., Lodhi M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila hyde1.";

Eur. J. Blochem. 225:1089-1095(1994).

-I. BLOCTION: POSSIBLE STRUCTURAL ROLE IN THE SPERM TAIL.

-I. SUBCELLULAR LOCATION: Cytoplasmic.

-I. SUBCELLULAR LOCATION: CYTOPLARMY SPERMATOCYTES AND EARLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ï
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ); Db -
3.7e+02;
2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339 KKCKKLAKKEKKAGEKNKLKKKAG-KGKKKCKKLG 972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 EXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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16-0CT-2001 (Rel. 40, Last annotation update)
MSH6-1 nematch repeir protein MSH6-1 (ALMSh6-1).
MSH6-1 OR AGAA.3 OR AT4G02070 OR T10M13.8.
01-FEB-1995 (Rel. 31, Created)
10-FEB-1995 (Rel. 31, Last sequence update)
10-CCT-2001 (Rel. 40, Last annotation update)
Axoneme_associated protein mst101(2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT; 1324 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50.8%; Score 66.5; D
25.7%; Pred. No. 3.7e
Live 23; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X73481; CAA51876.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; S34154; S34154
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                                                                                                                        MST101(2).
Drosophila hydei.
                                                                                                                                                                                                                                                                            NCBI_TaxID-7224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SPERMATIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2000
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004716;
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REAL SEQUENCE FROM NA.

REAL SEQUENCE FROM NA.

REAL SEQUENCE C. (Wanbutt R., Murphy G., Volckaert G., Marbire C., Schuelled C., Wanbutt R., Dusterbeft A., Stletema W., Entire N. Dusterbeft A., Stletema W., Entire N. Dusterbeft A., Stletema W., Entire R., Muchler M., Marcarde W., Obermaier B., Mache R., Muchler M., Rechert B., Portetelle D., Perez-Alonso M., Bourry M., Bancord I., Rechert B., Portetelle D., Perez-Alonso M., Bourry M., Bancord I., Rechert B., Portetelle D., Perez-Alonso M., Bourry M., Bancord I., Rechert B., Portetelle D., Perez-Alonso M., Bourry M., Bancord I., Radie M., Delseny M., Elban L., Robben J., Langham S.-A., McCollege B., Wanteren M., Peters S., Voor M., Bastiaens I., Aert R., Defoor E., Radeven M., Weltjens I., Voot M., Bastiaens I., Aert R., Defoor E., Radeven M., Weltjens I., Voot M., Bastiaens I., Aert R., Defoor E., Radeven M., Meltjens I., Melton Lankhorst R., Rose M., Bauf J., Kohele F., Bernelser S., Hempel S., Feldpausch M., Lamberth S., Von den Deele H. Bernelser S., Hempel S., Feldpausch M., Lamberth S., Von den Deele R. Mooijman P., Klein Lankhorst R., Rose M., Bauf J., Kocharter P., Ra Bernelser S., Hempel S., Feldpausch M., Lamberth S., Von den Deele R. Monimar D., Klein Lankhorst R., Rose M., Bauf J., Kochart R., Borkova D., Blocker M., Radrafer A.C., Schaefer M., Mellan B., Petters R., Scharte M., Grimm M., Lochnert T.-H., Borkova D., Blocker M., Radrafer A.C., Schaefer M., Bensy N., Rechon T., Rober C., Romoto B., Schaefer M., Schaefer M., Schaefer M., Bensy D., Recher R., Schaefer M., Schaefer M., Bensy D., Schaefer M., Bensy D., Schaefer M., Schaefer M., Bensy D., Schaefer M., Bensy D., Schaefer M., Bensy D., Schaefer M., Schaefer M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 between the Swiss Institute of Bioinformatics and the EMBL outstation—
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-i- FUNCTION: INVOLVED IN POST-REPLICATIVE DNA-MISMATCH REPAIR (BY SIMILARITY).
-i- SUBUNIT: HETERODIMER OF MSH2 AND MSH6 (GTBP) (BY SIMILARITY).
                                                                                      STRAIN-cv. Columbia;
MEDLINE-99444907; PubMed-10517319;
MEDLINE-99444907; PubMed-10517319;
MEDLINE-99444907; PubMed-10517319;
Frour mismatch repair paralogues coexist in Arabidopsis thaliana:
Atmsh2, Armsh3, Atmsh6-1 and Atmsh6-2.";
Mol. Gen. Genet. 262:239-249(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -1- SIMILARITY: BELONGS TO THE DNA MISMATCH REPAIR MUTS FAMILY.
Johnson A.F., Dedhia N., Martienssen R., McComble W.R.; Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                 SEQUENCE FROM N.A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JUL-1989 (Rel. 11, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase beta 1
(EC 3.1.4.11) (PLC-beta-1) (Phospholipase C-beta-1) (PLC-I) (PLC-154).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              diacyjqjycerol.
--- COFACTOR: Calcium.
--- MISCELLANEOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1 IS MEDIATED BY TWO G-PROTEIN ALPHA SUBUNTS, ALPHA-O AND ALPHA-11.
--- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS OF PLC AND ARE ESSENTIAL FOR CATALITIC ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                     ATP (POTENTIAL).
ADR -> GKPRSLLL (IN REF. 1).
Q -> QURRAHGNL (IN REF. 1).
P -> PGIINLLHIHILILANCTASHISLP (IN
                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -1- CATALYTIC ACTIVITY: 1-phosphatidyl-1D-myo-inositol 4,5-
bisphosphate + H(2)0 = D-myo-inositol 1,4,5-trisphosphate
                                                                                                                                                                                                                                                                                                                            Length 1324;
                                                                                                                                                                                                                                                                                                              Score 66; DB 1; Lengtn 13.2
Pred. No. 3.98+02;
                                                                                                                                                                                                                                                                                 REF. 1).
1324 AA; 146797 MW; 787A340272CF979C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                      4 EXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                            SMART; SMO0534; MUTSac; 1.
SMART; SMO0533; MUTSd; 1.
SMART; SMO0333; TUDOR; 1.
PROSITE; PSO0486; DNA_MISMATCH_REPAIR_2; 1.
DNA_repair; ATP-binding; DNA-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT; 1216 AA.
                                                                                                                                                                                                                                                                                                                                                         22; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
MEDLINE-88270496; PubMed-2455601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -1- SIMILARITY: CONTAINS 1 C2 DOMAIN.
EMBL; AF001535; AAB5798.1; --
EMBL; AJC45967; CAB5337.1; --
EMBL; AL161493; CAB6700.1; --
EMBL; AL161493; CAB6700.1; --
InterPro; IPR000432; MutS_C.
InterPro; IPR002863; MutS_N.
InterPro; IPR00299; Tudor.
Pfam; PF00488; MutS_N.
ProDom; PF001634; MutS_N; 2.
ProDom; PF001634; MutS_N; 2.
ProDom; PF001634; MutS_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last seq
15-JUN-2002 (Rel. 41, Last ann
                                                                                                                                                                                                                                                                                                                           50.4%; 22.9%;
                                                                                                                                                                                                                                                                                                                                         Local Similarity 22.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID-9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENZYMES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIBL BOVIN
                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                              ProDom; SMART; S
                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                         NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIB1_BOVIN
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                                                                                                                                                                                                                                                                                                                                                         Matches
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entitles requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
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                                                                                            | PIR, A28822, A28822,
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Glanfrancesco F., Billi A.M., Stuppia L., Palka G., Cocco L.,
"Identification and chromosomal localisation by fluorescence in situ
hybridisation of human gene of phosphoinositide-specific phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-OUN-2002 (Rel. 41, Last annotation update)
1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase beta 1
(EC 3.1.4.11) (PLC-beta-1) (Phospholipase C-beta-1) (PLC-1) (PLC-154).
PLCB1 OR KIAA0581.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Caricasole A., Sala C., Roncarati R., Formenti E., Terstappen G.C.; "Cloning and characterization of the human phosphoinositide-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIBI_HUMAN STANDARD; PRT; 1216 AA.
Q9NQ66; Q9NQ65; Q9NQH9; Q9NTH4; Q60325; Q9H4H2; Q9BQW2; Q9UJP6;
Q9UM26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.0%; Score 65.5; DB 1; Length 1216; 30.6%; Pred. No. 3.9e+02; ive 19; Mismatches 5; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 C2 DOMAIN.
31 BY SIMILARITY.
78 BY SIMILARITY.
87 PHOSPHORYLATION (BY PKC).
138714 MW; BEF809177F1B7ABB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |:||:::||:::|
1059 EICEKEKKELKKKMDKRRQEKITEAKSKDKSQMEEE 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 EXCEXXXKEXXKXXDNNKXEK-EXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochim. Biophys. Acta 1484:175-182(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               phospholipase C-beta 1 (PLCbetal).";
Biochim. Biophys. Acta 1517:63-72(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. (ISOFORMS A AND B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-20225428; PubMed-10760467;
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                                                                              EMBL; J03137; AAA30702.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1216 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
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PubMed=11118617;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rissue-Brain
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ACT_SITE
MOD_RES
SEQUENCE
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Best Local
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PIB1_HUMAN
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ò
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AMELINE-ZIOS8/49; PURDAGE-II/80025;

RA Deloukas P., Matthews C.H., Ashurst J., Burton J., Gilbert J.G.R.,

Balley J., Barlow K.F., Baktes K.N., Beard L.M., Beard D.M.,

Banley J., Barlow K.F., Blakes K.N., Bardgeman A.M., Brown A.J.,

RA Beasley O.P., Bird C.P., Blakes K.N., Carder C., Carter N.P.,

Beasley O.P., Burtll W.D., Butler A.P., Carder C., Carter N.P.,

Chapman J.C., Cland M., Clark G., Clark E., Corby N.R.,

Clegs S., Cobley V.E., Collier R.E., Cornor R.E., Corby N.R.,

Clegs S., Cobley V.E., Collier R.E., Cornor R.E., Corby N.R.,

Blington A.G., Frankland J.A., Fraser A., French L., Garner P.,

Ralington A.G., Frankland J.A., Fraser A., Ended D., Garner P.,

Ralington A.G., Frankland J.A., Fraser A., Laird G.K., Lawlor S.,

Huckle E., Hunt A.R., Hunt S.E., Jekosch K., Johnson C.M., Johnson D.,

RA Harsh V.L., Martin S.L., McConnachie L.J., McLaid G.K., Lawlor S.,

Banklus S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,

Alliance B.J.C.T., Prathalingam S.R., Plumb R.W., Ramsay H.,

Ray M.P., Ross M.T., Scott C.E., Sehra H.K., Shownkeen R., Sims S.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,

Swann R.M., Sycamore N., Taylor R., Tee L., Thomas D.W., Thillams S.A.,

Miltehead S.L., Whittaker P., Walliey D.L., Willians L., Willians L., Willians L., Walling D.L., Walling D.R., Walling D.R., Walling D.R., Walling D.L., Walling D.R., Wal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -i- ALTERNATIVE PRODUCTS: 2 ISOFORMS; A (SHOWN HERE) AND B; ARE PRODUCED BY ALTERNATIVE SPLICING.
-i- MISCELLANDOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1 IS MEDIATED BY TWO G-PROTEIN ALPHA SUBUNITS, ALPHA-O AND ALPHA-11.
-i- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS OF PLC AND ARE ESSENTIAL FOR CATALYTIC ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The DNA sequence and comparative analysis of human chromosome 20."; Nature 414:865-871(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Koehrer K., Beyer A., Mewes H.-W., Gassenhuber J., Wiemann S., Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -1- CATALYTIC ACTIVITY: 1-phosphatidyl-1D-myo-inositol 4,5-
bisphosphate + H(2)0 - D-myo-inositol 1,4,5-trisphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nagase T., Ishikawa K.-I., Miyajima N., Tanaka A., Kotani H.,
Nomura N., Ohara O.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 261-1216 FROM N.A. (ISOFORM B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 519-1216 FROM N.A. (ISOFORM A)
                       MEDLINE=21638749; PubMed=11780052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Brain;
MEDLINE-98290545; PubMed-9628581;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAB98143.1; -
AAF86613.1; -
CAC16181.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAC34366.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    diacylglycerol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AY004175;
AL031683;
AL031683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rissue-Testis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENZYMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rogers J.;
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EMBL;
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MEDLINE-88270495; PubMed-3390863;
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P10687;
01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase beta 1
(BC 3.1.4.11) (PLC-beta-1) (Phospholipase C-beta-1) (PLC-154).
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PLSLSSDPGKVNHKTPSSEELGGDIPGKEFDTPL -> GEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSSFLSETCHEDPSVSPNFTPPNPQALKW (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PHOSPHORYLATION (BY PKC) (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                         Prime Proof 18 (2) 2. Proof 18 (2) 2
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MAGAQPGVHALQLKPVCVSDSLKKGTKFVKWDDD -
LQGIATKILIRILSDALIRKETDLKS (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAB98143).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |:||:::||::|::|
1059 EICEKEKKELKKKMDKRQEKITEAKSKDKSQMEEE 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 EXCEXXXKEXXXXXDNNKXEK-EXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Pred. No. 3.9e
19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C2 DOMAIN.
BY SIMILAR
BY SIMILAR
                                                                                                                                                                                  InterPro; IPR000008; C2.
InterPro; IPR00192; PI_PLC.
InterPro; IPR00909; PI_PLC.Xdom.
InterPro; IPR001711; PI_PLC_X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138566 MW;
      AL050315; CAB56498.1; -. AL049632; CAB46663.1; -. AL137267; CAB70666.1; -. AB011153; BAA25507.1; -.
                                                                                                                                                           Genew; HGNC:15917; PLCB1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 30.6 tes 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2221
266
309
320
352
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393
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                                                                                                                                P10688; 1DJX.
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221
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or send an ...

DR PIN, A28821, A28821.

DR HSSP, P10688, LDDX.

DR InterPro; IPRO01039, P1_PLC_Xdom.

DR InterPro; IPRO01039, P1_PLC_Xdom.

DR PFO01089; P1_PLC_Y: 1.

DR PRINTS; PR001999, PHPHILIPASEC.

DR SWART; SW00129; P1_PLC_Y: 1.

DR SWART; SW00129; P1_PLC_Y: 1.

DR SWART; SW00129; P1_PLC_Y: 1.

DR SWART; SW00149; PLCXC: 1.

DR SWART; SW00149; PLCXC: 1.

DR SWART; PS00009; P1_PLC_Y: 1.

DR PROSITE; PS50009; P1_PLC_X: DOMAIN Y.

TRIBATION (BY PRC).

138344 MM; 92P23691781P78BE CRC64;

TO STORE 65.5; DB 1; Length 1216

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -i- CATALTIC ACTIVITY: 1-phosphatidyl-1D-myo-inositol 4,5-
bisphosphate + H(2)0 = D-myo-inositol 1,4,5-trisphosphate +
diacylglycerol.
-i- COFACTOR: Calcium.
-i- SUBCELLULAR LOCATION: Cytosolic and particulate fractions.
-i- TISSUE SPECIFICITY: Highest expression in brain. Also expressed in parotid gland, liver, uterus, lung, heart, actenal gland and overy. Not detected in spleen, pancreas, intestine, thymus or
                                                                                                                                                                                                                                                                                       "Cloning, sequencing, purification, and Gq-dependent activation of phospholipase C-beta 3.";
J. Biol. Chem. 268:6654-6661(1993).
-!- EUNCTION: THE PRODUCTION OF THE SECOND MESSENGER MOLECULES DIACYICALYCEROL (DAG) AND INOSITOL 1,4,5-TRISPHOSPHATE (IP3) IS MEDIATED BY ACTIVATED PHOSPHATIDYLINOSITOL-SPECIFIC PHOSPHOLIPASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIATED BY TWO G-PROTEIN ALPHA SUBUNITS, ALPHA-Q AND ALPHA-11.
-1- SIMILARITY: DOMAINS X AND Y ARE CONSERVED IN DIFFERENT FORMS OF PLC AND ARE ESSENTIAL FOR CATALYTIC ACTIVITY.
-1- SIMILARITY: CONTAINS 1 C2 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -1- MISCELLANEOUS: THE RECEPTOR-MEDIATED ACTIVATION OF PLC-BETA 1
                                                                                                                                                                                MEDLINE-93203265, PubMed-8454637;
Jhon D.-Y., Lee H.-H., Park D., Lee C.-W., Lee K.-H., Yoo O.J.,
Rhee S.G.;
Suh P.-G., Ryu S.H., Moon K.H., Suh H.W., Rhee S.G.; "Cloning and sequence of multiple forms of phospholipase C."; Cell 54:161-169(1988).
                                                                                                                                                 ACTIVITY, TISSUE SPECIFICITY, AND SUBCELLULAR LOCATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |:||:::||::|
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Search completed: June 2, 2003, 14:19:23 Job time: 12 secs

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269.993 Million cell updates/sec
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Copyright (c) 1993 - 2003 Compugen Ltd.
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Maximum DB
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

sp_vertebrate:*
sp_unclassified:*

sp_rvirus:* sp_bacteriap:*

sp_archeap:*

sp_fung1:*
sp_human:*
sp_invertebrate:*

sp_mammal:*

sp_mhc:*

sp_archea:*
sp_bacteria:*

SPTREMBL_21:*

Database :

sp_organelle:* sp_phage:*

sp_plant:* sp_rodent:*

sp_virus:*

SUMMARIES

Besult Watch Length DB ID Description

78	59.5	1334	5 097322	097322 plasmodium	
78	56.5	520	13 09D682	097322 plasmodium	
74	56.5	522	13 09D682	094082 brachydanio	
74	56.5	524	5 097337	094082 brachydanio	
74	56.5	524	5 095803	095802 brachydanio	
74	56.5	524	5 095803	095802 brachydanio	
73	55.7	238	5 018276	095802 brachydanio	
71	54.6	54.0	6 08KM2	095803	095802 arginia
71	54.2	257	3 001803	098402 arginia	
71	54.2	257	3 001803	0994023 arginia	
71	54.2	257	3 090523	001597 bombyx mori	
71	54.2	257	3 099823	0994023 arginia	
72	53.4	231	2 093828	099923	099925 arginia
73	53.4	441	5 099927	099923	099925 arginia
74	55.4	5 098527	099923	099925 arginia	
75	53.4	55.5	5 098125	099125 arginia	
76	53.4	55.5	5 098125	099125 arginia	
77	53.4	55.5	5 098125	099125 arginia	
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3 <u>09</u> DGH7	Q9B14/ 060405	075760	Q9H6Z4	Q9UG74	Q01828	Q9UVY2	097326	6IA96Ö	064046	5 031976	O9N5Z8	061765	Q8WT00	002313	Q8TD23	1 090x19		026033	Q9Y155	09W0X8	P91854		_	002124		Q95UP8	
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ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID-36329;
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"Cloning, expression and promoter analysis of zebrafish prosaposin.";
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AF276996; AAL54381.1;
InterPro; IPR0003119; SapA.
InterPro; IPR000004; SapB.
Probom: PF02199; SAPA; 2.
Probom: PF02199; SAPA; 2.
SWART; SW00162; SAPA; 4.
                                                                                                                                                                 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Lysosomal cofactor/neurotrophic factor prosaposin.
Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygil; Neopterygil; Teleostel; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygil; Neopterygil; Teleostel; Ostariophysl; Cypriniformes;
Cyprinidae; Danio.
NCBI_TaxID-7955;
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The zebrafish prosaposin cDNA.";
Submitted (NOV-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AF108655, AAG32919.1;
REMBL; AF108655, AAG32919.1;
REMBL; AF108655, AAG32919.1;
RICEPRO; IPR000119; SapA.
RICEPRO; IPR000004; SapB.
R Pfam; PF02199; SAPA; 2.
R Probom; PD001737; SapB; 3.
SWART; SW0162; SAPA; 2.
R SWART; SW0118; SAPB; 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56.5%; Score 74; DB 13; Length 520; 25.7%; Pred. No. 1.18+02; Live 19; Mismatches 7; Indels
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                                                                     520 AA.
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                                                                                                                                       01-MAR-2002 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 25.7% tes 9; Conservative
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Q9DG82
RESULT 2
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Rhabditidae; Peloderinae; Caenorhabditis.
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                                                                                                                                                              PFC0570C, MAL3P4.1.
Plasmodium falciparum (isolate 3D7).
Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 594;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The sequence of C. elegans cosmid C28C12."; Submitted (NOV-1995) to the EMBL/GenBank/DDBJ databases
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Nature 400:532-538(1999).
EMBL. ALO08970. CAA15592.2; -.
Hypotherical protein.
SEQUENCE 594 AA; 70716 MW; AOF884813CF3ABB5 CRC64;
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Hypothetical 27.3 kDa protein.
                                               Last sequence update)
Last annotation update)
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Pred. No. 1.3e+02)
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25.7%; Pred. No. 1.3e+02
tive 23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238 AA.
01-NCV-1998 (TriMBLrel. 08, Created)
01-CCT-2000 (TriMBLrel. 15, Last seq
01-DEC-2001 (TrEMBLrel. 19, Last ann
Hypothetical 70.7 kDa protein.
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MEDLINE-99376085; PubMed-10448855;
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STRAIN-BRISTOL N2;
MEDLINE-99069613; PubMed-9851916;
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Similarity 18.497; Conservative
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 Best Local
Matches
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Q8XHG9.
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NCBI_TaxID=5763;
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Eukaryota: Heterolobosea; Schizopyrenida; Vahlkampfiidae; Naegleria.
NCBL_TaxID=5763;
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18.4%; Pred. No. 80;
iive 26; Mismatches 5; Indels
                                                                      55.7%; Score 73; DB 5; Length 238; 21.1%; Pred. No. 65;
                                                                                            5; Indels
                                                                                                                                                                                                                                                                                                                 Nickel R., Leippe M.;
"Pore-forming peptides of Naegleria fowleri.";
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
EMBL, AR196308; AAL01157.1;
InterPro; IPR000004; SapB.
ProDom; PD001732; SapB; 2.
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Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; ARIS40463. AAK21658.1; -.
InterPro; IPR000004; SapB.
Probom.; PD001732; SapB; 2.
SNART; SM00118; SapB; 3.
SEQUENCE 307 AA; 33133 MW; 8503E4A755BC6DDF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                           0B67550766B5B1D8 CRC64;
                                                  238 AA; 27290 MW; 828EF6D21EA03866 CRC64;
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                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
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                                                                                                                1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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                                                                                            25; Mismatches
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PRONP-A.
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                                                                                                                                                                                                                                            Naegleriapore A (Fragment).
       InterPro; IPR000004; SapB. ProDom; PD001732; SapB; 1. SMART; SM00118; SAPB; 4. Hypothetical protein.
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Best Local Similarity 18.4*
Matches 7; Conservative
EMBL; U40797; AAB37550.2;
                                                                                            8; Conservative
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                                                                               Best Local Similarity
Matches 8; Conserv
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SEQUENCE
                                                   SEQUENCE
                                                                      Query Match
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Q95x03
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Length 307;

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55.7%; Score 73;

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EMBL; AF442141; AAL37983.1; ...
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01-MAR-2002 (TTEMBLrel. 20, Last annotation update)
Style-specific self-incompatibility putative modifier protein HT-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed-11792842;
Shimizu T., Ohtani K., Hirakawa H., Ohshima K., Yamashita A.,
Shiba T., Oqaaawara N., Hattori M., Kuhara S., Hayashi H.;
"Complete genome sequence of Clostridium perfringens, an anaerobic
flesh-eater.";
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Bacteria; Firmicutes; Bacillus/Clostridium group; Clostridia;
Clostridiales; Clostridiaceae; Clostridium.
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Pred. No. 36;
22; Mismatches 9; Indels
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EMBL. AP003194; BAR8222.1; -.
Hypothetical protein; Complete proteome.
SEQUENCE 540 AA; 65214 MW; 4184F9EBB1F2C8C4 CRC64;
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(TrEMBLrel. 20, Last sequence update)
(TrEMBLrel. 20, Last annotation update)
                                                                                          1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
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27.8%; Pred. No. 2e+02;
tive 21; Mismatches
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                    Pred. No. 83;
5; Mismatches
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18.4%; Pic.
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illarity 18.48;
Conservative 2:
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Matches 10; Conservative
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Matches 7; Conserv
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Bombyx mor1
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Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Amanatides P.G., Scherer S.E., It P.W., Hoodsins R.A., Galle R.F.,
As Ceorge R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazel R.G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beleson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
Abrils K.C., Bussam D.A., Butler H., Cadieu E., Center A., Chandra I.,
Burtis K.C., Bussam D.A., Butler H., Cadieu E., Center A., Chandra I.,
A Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
Ad Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkoy P.,
Burbin K.J., Evangelista C.C., Ferraz C., Ferrigra S., Fleischmann W.,
Kosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
                                                                                                                                                                                                                                                                                                                          Eukaryota; Fung1; Ascomycota; Pneumocyst1domycetes; Pneumocyst1daceae;
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Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroldea; Drosophilidae; Drosophila.
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"Antigenic variation by positional control of major surface glycoprotein gene expression in Pneumocystis carinii.";
EMBL; D31910; BAA06707.1;
Interpro; IPR003330; MSG.
Interpro; IPR003349; MSG.
NON_TER 257
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                                                                                                                                                                                           01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TTEMBLrel. 13, Created)
01-MAR-2001 (TTEMBLrel. 16, Last sequence update)
01-JUN-2002 (TTEMBLrel. 21, Last annotation update)
Pyrivate kinase (EC 2.7.1.40) (PK).
1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                       48 AACSRCTCPSKDNKNNNNNNNNNSDDDDFIINVCKAAC 85
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                                                                                                                                                           257 AA
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MEDLINE-95287050; Pubmed-7769293;
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                                                                                                                                                           PRELIMINARY;
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01-NOV-1996 (TrEMBLrel.
                                                                                                                                                                                                                                                                                               Pneumocystis carinii.
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Best Local 9
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Q01803
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RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibbegwam C.,
A Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
Ka Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Lasko P., Kalishina N.Y., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.Y., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.K., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Relnert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Siden Framon G.S., Pan S., Pollard J., Puri V., Santh T.,
RA Spier E., Stanfling A.C., Staplecon M., Stkopski M. F., Smith T.,
RA Spier E., Spradling A.C., Staplecon M., Stkopski M., Swipski M. S.
RA Sylrskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Williams S.M., Woodage T., Weilserbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q., A.,
RA Williams S.M., Myers E.W., Rubin G.M., Venter J.C.,
C. I. CATALYTIC ACTIVITY: ATP + PYRUVATE - ADP + PHOSPHOENOLPYRUVATE.
C. I. CATALYTIC ACTIVITY: ATP + PYRUVATE - ADP + PHOSPHOENOLPYRUVATE.
C. I. CATALYTIC ACTIVITY: ATP + PYRUVATE - ADP + PHOSPHOENOLPYRUVATE.
C. I. Sublitanty: BUELONGS TO THE PYRUVATE KNASE FAMILY.
EMBL; AEO03738; AAF55980.2; - .
SENEL, REWELL, REMEAUST OF THE PYRUVATE KNASE FAMILY.
EMBL; REMEAUST.
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Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
Bombycoidea; Bombycidae; Bombyx.
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Tambunan J., Chang P.-K., Li H., Natori M.;

Tambunan J., Chang of a cDNA encoding a silkworm protein which contains the conserved BH regions of Bcl-2 family proteins."; Gene 212:287-293(1998).

EMBL; AB008449; BAA23126.1; -.

InterPro; IPR003119; SapA.

InterPro; IPR0000004; SapA.

InterPro; PR02199; SAPA; 2.
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ProDom; PD001009; Pyruvate_kinase; 1.
TIGRFAMS; TIGR01064; Pyruv_kin; 1.
PROSITE; PS00110; PYRUVATE_KINASE; 1.
Glycolysis; Kinase, Magnesium; Transferase.
SEQUENCE 744 AA; 83997 MW; 27AAD998D07E17B7 CRC64;
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Last annotation update)
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Interpro: IPR001697; Pyruvate_kinase.
Pfam; PF00224; PK; 1.
Pfam; PF02887; PK_C; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
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us-09-780-438c-6.dx.rspt

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Query Match
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Q9U9P3;
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                                                                                                                                                                                                                                                                                                                                             STRAIN-SCHU S4;
MEDILINE-2147415; PubMed-11526142;
MEDILINE-2147415; PubMed-11526142;
Johannsson A., Goransson I., Larsson P., Sjostedt A.;
"Extensive Allelic Variation among Francisella tularensis Strains in Short-Sequence Tandem Repeat Region.";
J. Cilin. Microbiol. 39:3140-3146(2001).
EMBL: AF356777; AAL06398.1;
InterPro: IRF001440; TPR.
Hypothetical protein.
                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
NCBI_TaxID-6239;
                                                                                                                                                                                                        033EJ8;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Hypothetical 27.1 kDa protein.
Francisella tularensis subsp. tularensis.
Bacteria; Proteobacteria; gamma subdivision; Francisella group;
Francisella.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 53.4%; Score 70; DB 2; Length 231; Best Local Similarity 23.7%; Pred. No. 1.2e+02; Matches 9; Conservative 23; Mismatches 6; Indels
                                                           Length 965;
                                                                                     Indels
          SMART; SM00162; SAPA; 2.
SMART; SM00118; SAPB; 7.
SEQUENCE 965 AA; 108825 MW; F41A7BEE7F626078 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           il protein.
231 Aa; 27148 MW; 6E5A2BF93BAAFC6F CRC64;
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79 EIAKELEKQQKQQUSQNNNKDNKDNKDNKDNKDNKDNKDN 116
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01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Hypothetical 30.2 kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                          Query Match 54.2%; Score 71; DB 5; Lei
Best Local Similarity 22.9%; Pred. No. 3.8e+02;
Matches 8; Conservative 20; Mismatches 7;
                                                                                                                        1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCX 35
                                                                                                                                                                                                231 AA.
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                                                                                                                                                                                               PRT;
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MEDLINE-99069613; PubMed-9851916;
ProDom; PD001732; SapB; 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
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                                                                                                                                                                                                                                                                                                          NCBI_TaxID=119856;
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STRAIN-BRISTOL N2;
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Q9N5S7
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Ecdysone dependent glycoprotein (Fragment).
SAP-R OR P110 OR BCDNA:GH0812 OR GG12070.
DIOSOPALIA melanogaster (Fruit fly).
Eukaryota: Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Mooptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea: Drosophilidae; Drosophila.
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Galewsky S., Rickoll W.L.;
"Drosophila ecdysone dependent cell adhesion molecule, P110.";
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF162129; AAD45802.1; -.
FlyBase; FB900000416; Sap-r.
InterPro; IPR000004; SapB.
Probom; PD001732; SapB; 3.
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Pred. No. 2.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                 Waterston R.;
"Direct Submission.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; ACOOG(42; AAR39830.1; -.
InterPro; IPRO00886; ER.target.
InterPro; IPRO0063; Thiored.
PROSITE; PSO0014; ER_TARGET; UNKNOWN_1.
Hypothetical protein.
SEQUENCE 257 AA; 30205 MW; BF7FBA62D04DBED6 CRC64;
Wohldmann P., Nhan M., Chissoe S., Hawkins J.;
"The sequence of C. elegans cosmid F49H12.";
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE 441 AA; 49283 MW; 9372D221B33861C1 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 53.4%; Score 70; DB 5; Le Best Local Similarity 31.2%; Pred. No. 1.3e+02; Matches 10; Conservative 19; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           203 EKKEKKEDKKKDEKKKDKKKEDKKDKKDK 234
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23.7%; Pred. No. c...
21; Mismatches
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Best Local Similarity 23.74
Matches 9; Conservative
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June 2, 2003, 14:18:29; Search time 15 Seconds (without alignments) 74.538 Million cell updates/sec
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131
1 XXCEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/laa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/laa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/laa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/laa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/laa/PCTUS_COMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                  262574 segs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                       - protein search, using sw model
                                                                                                                                                                                                                                                                                                                  BLOSUM62DX
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                              Perfect score;
Sequence:
                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                             OM protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                 Run on:
                                                                                                                                                                                                                             Title:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. SUMMARIES

	,	Description	Sequence 3, Appl1	m	4	'n	Sequence 2, Appl1	7	m	7	H	Ĥ	Ĥ	ı,	1,	ı,	H	Sequence 8, Appli	æ	6	Sequence 18, Appl	Sequence 9, Appli	7	7,	7	Н	23,	Sequence 11, Appl	22,
SUMMAKIES		a	US-08-100-247-3	US-08-483-146A-3	38-232-	US-08-484-594A-3	US-08-100-247-2	US-08-483-146A-2	US-08-232-513A-3	US-08-484-594A-2	US-08-100-247-1	US-08-483-146A-1	US-08-232-513A-1	US-08-484-594A-1	US-09-231-159-1	US-08-611-307-1	US-09-148-030-1	US-09-231-159-8	US-08-611-307-8	US-08-483-146A-9	US-08-232-513A-18	US-08-484-594A-9	US-09-231-159-7	US-08-611-307-7	US-09-308-375-2	US-09-180-100-10	US-09-180-100-23	1	us-09-180-100-22
	I	n :	Н	Н	• •	-	•	٦	Н	Н	Н	Н	Н	Н	4	4	4	4	4	Н	-	-	4	4	4	4	4	4	4
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æ	Query	Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	58.8	58.8	58.8	58.8	58.8	58.8	58.8	55.0	55.0	53.4	53.4	53.4	53.4	53.4	51.9	49.2	49.2	49.2	49.2
		Score	131	131	131	131	131	131	131	131	77	77	77	77	77	77	77	72	. 72	70	70	70	70	70	68	64.5		64.5	64.5
	Result	No.	1	71	m	4	5	9	7	œ	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

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Gaps

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Length 80; Indels

Query Match 100.0%; Score 131; DB 1; 1 Best Local Similarity 50.0%; Pred. No. 1.6e-05; Matches 19; Conservative 19; Mismatches 0;

MOLECULE TYPE: protein HYPOTHERICAL: NO ANTI-SENSE: NO FRAGMENT TYPE: internal IMMEDIATE SOURCE: CLONE: SAPOSIN C US-08-100-247-3

TOPOLOGY: linear

internal

Sequence 19, Appl Sequence 19, Appl Sequence 4, Appl Sequence 5, Appl Sequence 5, Appl Sequence 6, Appl Sequence 6, Appl Sequence 20, Appl Sequence 20, Appl Sequence 38, Appl Sequence 9, Appl Sequence		C FACTOR FLOOR
14 1 US-08-444-231-19 14 1 US-08-152-443A-19 14 5 PCT-0835-17083-4 14 6 US-08-152-443A-19 18 4 US-08-195-836C-76 18 1 US-08-100-24-5 18 1 US-08-100-24-5 18 1 US-08-232-513A-6 18 1 US-08-484-594A-5 18 4 US-09-231-159-20 18 4 US-09-231-159-20 18 4 US-09-148-030-2 45 4 US-09-990-571-38 45 4 US-09-990-571-38 45 4 US-09-990-571-38 45 4 US-09-990-571-38 45 4 US-09-528-784A-38 45 4 US-09-528-784A-85 27 2 US-08-475-844-9	ALIGNMENTS	AS A NEUROTROPHIC LSON AND BEAR IVE SIXTEENTH FI OS .0, Version #1.25 ,247 EN.002A
28 63.5 48.5 314 330 63.5 48.5 314 33 63.5 48.5 314 33 4 66.6 188 35 61 46.6 188 39 61 46.6 188 39 61 46.6 61 45.6 445 61 46.6 61 445 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 61 46.6 645 645 645 645 645 645 645 645 645 64		RESULT 1 Sequence 3, Application US/08100247 Sequence 3, Application US/08100247 Patent No. 5571787 GENERAL INFORMATION: GENERAL INFORMATION: APPLICANT: KISHIMOTO, YASUO TITLE OF INVENTION: PROSAPOSIN AS, NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS: ADDRESSEE: KNOBBEE, MARTENS, OLSO, STREET: 620 NEWPORT CENTER DRIVE CITY: NEWPORT BEACH STRATE: GA COUNTY: USA ZIP: 92660 COMPUTER: IBM PC COMPATIBLE CONFUTER: IBM PC COMPATIBLE COMPUTER: IBM PC COMPATION: MEDIUM TYPE: PATENTION DATA: APPLICATION NUMBER: 29,655 RECISTRATION POR SEQ ID NO: 3; SEQUENCE CHARACTERISTICS: LEBNOTH: 80 amino acids TYPE: ATANCEMENT SINGLE

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4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: peptide
                                         California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid
OGY: linear
                          CITY: San Diego
                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92660
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                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
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                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: O'BTIGH, John S.
APPLICANT: Kishimoto, Yasuo
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: COMPRISING PROSAPOSIN AND NEUROTROPHIC PEPTIDES DERIVED
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
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APPLICANT: O'Brien, John S.
TITLE OF INVENTION: Brosaposin and Cytokine-Derived Peptides
TITLE OF INVENTION: Brosaposin and Cytokine-Derived Peptides
TITLE OF INVENTION: Brosaposin and Cytokine-Derived Peptides
TITLE OF INVENTION: CORRESPONDENCES: 20
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 50.0%; Pred. No. 1.6e-05;
Matches 19; Conservative 19; Mismatches 0; Indels
1 XXCEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXKXX 38
                        3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUDRESSEE: Knobbe, Martens, Olson and Bear STREET: 620 Newport Center Blvd. 16th Floor CITY: Newport Beach STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSED for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MYELOS.002DV1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/483,146A FILING DATE: 07-JUN-1995 CLASSIFICATION: 514 CLASSIFICATION: 514 APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Campbell & Flores LLP
                                                                                                                                               Sequence 3, Application US/08483146A Patent No. 5696080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/08232513A Patent No. 5700909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: 1srealsen, wed A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: WYEL
TELEPOMHUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFAN: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: protein
FRAGMENT TYPE: internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 92660
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                         US-08-483-146A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-483-146A-3
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                                                                                                       RESULT 2
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Gaps
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APPLICANT: O'Brien, John S.
APPLICANT: O'Brien, John S.
APPLICANT: MEMORY YASUO
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
STATE: CA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 100.0%; Score 131; DB 1; Length 80; Best Local Similarity 50.0%; Pred. No.:1.6e-05; Matches 19; Conservative 19; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING DATE: 21-APR-1994
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: DOS
SOFTWARE: FeatSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
                                                                                                                                                                                              CLASIPECATION: 514
CLASIPECATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-7UL-1993
ATTORNEY AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1643
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEPHONE: (619) 535-9001
TELEPHONE: (619) 535-9001
TELEPHONE: (619) 535-9001
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KET: Peptide
; LOCATION: 1..80
GS-08-232-513A-4
US-08-232-513A-4
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/08484594A Patent No. 5714459 GENERAL INFORMATION:
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Gaps

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Length 523;

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Sequence 2, Application US/08483146A
Patent No. 5696080
GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
APPLICANT: O'Estimoto, Yasuo
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                              0; Indels
                                                                                                                          312 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         312 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                   1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                  100.0%; Score 131; DB 1;
50.0%; Pred. No. 0.00018;
ive 19; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 131; DB 1;
Pred. No. 0.00018;
                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: DOS
SOFTWARE: FastESD for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,146A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred, No. 0.00
9; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
ATORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET UNMBER: MYEL
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Sc
50.0%; Pre
ative 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 92660
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
                                         50.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 523 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: peptide
FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 50.0%
Matches 19; Conservative
                                         Best_Local Similarity 50.0%
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: US
                                                                                                                                                                                                                          US-08-483-146A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-232-513A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGIH:
                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:

APPLICANT: O'BRIEN, JOHN S.

APPLICANT: AISHIMOTO, YASUO
TITLE OF INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
ADDRESSE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
CITY: NEWPORT BEACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 XXCEXCEXXXKEXXXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FO COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0; Version #1.25
APPLICATION DATA:
APPLICATION NUMBER: US/08/100,247
FILING DATE: 19930730
CLASSIFICATION: 514
                                                                               MYELOS.002DV2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY AGENT INFORMATION:
NAME: ISTACLSON, Ned A.
REGISTRATION NUMBER: 29,655
REFRENCE/DOCKET NUMBER: 0BRIE
TELECOMMINICATION INFORMATION:
TELEPHONE: 619-235-0176
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/08100247 Patent No. 5571787
                                   NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: MYEI
TELECOMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFAX: 619-235-0176
                ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A
FILING DATE: 30-JUL-1993
                                                                                                                                                                        INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 80 amino acids
                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein
FRAGMENT TYPE: internal
                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
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                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANTI-SENSE: NO FRAGMENT TYPE: N-t IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92660
                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                        US-08-484-594A-3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; CLONE: F
US-08-100-247-2
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Gaps

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Indels

Length 523;

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APPLICATION NUMBER: US/08/484,594A
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Best Local Similarity 50.0%;
Matches 19; Conservative 19
                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acids
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: peptide
FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 619-235-0176
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: peptide HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 92660
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STATE: CA
COUNTRY:
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Sequence 2, Application US/08484594A

Batent No. 5714459

GENERAL INFORMATION:
APPLICANT: O'ENIEN, John S.
APPLICANT: Kishimoto, Yasuo
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
TITLE OF INVENTION: Prosaposin and Cytokine-Derived Peptides TITLE OF INVENTION: as Therapeutic Agents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 131; DB 1; Length 523; 50.0%; Pred. No. 0.00018; tive 19; Mismatches 0; Indels
                                                                                                                                                                                                               COMPUTER FEATURE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IRB PC compatible
COMPUTER: TEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/23.513A
FILING DATE: 21-APR-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-JUL-1993
ATORNEY/AGENT INPORMATION:
NAME: Campbell, Cathryn A.
REGISFRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                     ADDRESSEE: Campbell & Flores LLP
STREET: 4370 La Jolla Village Drive, Suite 700
CITY: San Diego
STATE: California
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: Protein
LOCATION: 1..523
OTHER INFORMATION: /label- Hum_prosaposin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-901
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 523 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 50.0%
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: protein
                    TITLE OF INVENTION: as
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
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COUNTRY:
                                                                                                                                                                            COUNTRY:
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Gaps
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APPLICANT: KISHIMOTO, YASUO
TITLE OP INVENTION: PROSAPOSIN AS A NEUROTROPHIC FACTOR
NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS: 5
ADDRESSEE: KNOBBE, MARTENS, OLSON AND BEAR
STREET: 620 NEWPORT CENTER DRIVE SIXTEENTH FLOOR
CITY: NEWPORT BEACH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWAREN PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/100,247
FILING DATE: 19930730
CLASSIFICATION: 514
ATTONREY/AGENT INFORMATION:
NAME: LETTER OF 19930730
REGISTRATION NUMBER: 29,655
REGISTRATION NUMBER: 29,655
TELEPHONE: 619-235-8550
TELEPHONE: 619-235-8550
TELEPHONE: 619-235-6176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  312 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKKCSKLP 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 131; DB 1;
Pred. No. 0.00018;
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION 514
PRIOR APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: 29,655
TELECOMGUNICATION INFORMATION:
TELECHONE: 619-235-8550
TELEFRAX: 619-235-857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
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Sequence 1, Application US/08232513A Patent No. 5700909
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APPLICANT: O'Brien, John S.

APPLICANT: Kishimoto, Yasuo
TITLE OF INVENTION: PHRAMACEUTICAL COMPOSITIONS
TITLE OF INVENTION: COMPRISING PROSAPOSIN AND NEUROTROPHIC PEPTIDES DERIVED
TITLE OF INVENTION: THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Blvd. 16th Floor
CITY: Newport Beach
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                                                                                                Length 22;
                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER TEACHBLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,146A
FILING DATE: 07-JUN-1995
CLASSIFICATION 1514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                              DB 1;
                                                                                              Query Match 58.8%; Score 77; DB Best Local Similarity 54.5%; Pred. No. 0.3; Matches 12; Conservative 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY AGENT INFORMATION:
NAME: Israelsen, Ned A
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: 29,655
TELECOMUNICATION INFORMATION:
TELEPHONE: 619-235-8550
TELEFAX: 619-235-0176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ||:::||::|::|CEFLVKEVTKLIDNNKTEKEIL 22
                                                                                                                                                                       6 CEXXXKEXXKXXDNNKXEKEXX 27
                                                                                                                                                                                             1 CEFLVKEVTKLIDNNKTEKEIL 22
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                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08483146A
Patent No. 5696080
                 IMMEDIATE SOURCE:
CLONE: 22-MER FRAGMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 22 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12; Conservative
     internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: peptide FRAGMENT TYPE: internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best_Local Similarity
Matches 12; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
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 FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: US
                                                                                                                                                                                                                                                                                      US-08-483-146A-1
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                                                         US-08-100-247-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                  RESULT 10
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RESULT 11

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Gaps
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Patent No. 5714459
GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
APPLICANT: KISHIMOTO, YASUO
TITLE OF INVENTION: USE OF PROSAPOSIN AND NEUROTROPHIC PEPTIDES
TITLE OF INVENTION: DERIVED THEREFROM
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson and Bear
STREET: 620 Newport Center Drive, Sixteenth Floor
GENERAL INFORMATION:
APPLICANT: O'Brien, John S.
TILLE OF INVEWION: Prosaposin and Cytokine-Derived Peptides
TITLE OF INVEWION: as Therapeutic Agents
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell & Flores LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 22;
                                                                                                                                                                                                                                                                                          COMPUTER FEACHBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: Eloppy disk
COMPUTER: Elb PC COMPATIBLE
COMPUTER: DATE: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,513A
FILING DATE: 31-APR-1994
CLASSIFICATION DATA:
APPLICATION NUMBER: US 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REFERENCE/DOCKET NUMBER: P-UD 1643
TELECOMMUNICATION INDERS: 31,815
REFERENCE/DOCKET NUMBER: B-UD 1643
                                                                                                                                                   3: Campbell & Flores LLP
4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58.8%; Score 77; DB 1;
54.5%; Pred. No. 0.3;
tive 10; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY: Peptide

LOCATION: 1..22

; OTHER INFORMATION: /label= SapC

US-08-232-513A-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 54.5%
Watches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 22 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 92660
COMPUTER READABLE FORM:
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                                                                                                                                                                        STREET: 4370 La Jol
CITY: San Diego
STATE: California
COUNTRY: USA
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Patent No. 6271196
GENERAL INFORMATION:
APPLICANT: O'BITION:
APPLICANT: O'BITION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell and Flores
STREET: 4370 La Jolla Village Drive, Suite 700
STREET: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: White, Michael T.
APPLICANT: O'Brien, John S.
APPLICANT: Wright, David E.
TITLE OF INVENTION: RETRO-INVERSO NEUROTROPHIC AND ANALGESIC
                                                                                                                                                            Length 22;
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                                                                                                                                                                                                             Mismatches
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MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD
TELECOMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-9001
TELEFAX: (619) 535-9001
TELEFAX: (619) 535-901
SEQUENCE CHARATION FOR SEQ ID NO: 1:
SEQUENCE CHARATION:
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Best Local Similarity 54.5%
Matches 12; Conservative
                                            : 22 amino acids
amino acid
GY: linear
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  INFORMATION FOR SEQ ID NO:
                          SEQUENCE CHARACTERISTICS
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                                                                    TYPE: amin TOPOLOGY:
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US-09-148-030-1
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TITLE OF INVENTION: Methods of Alleviating Neuropathic Pain TITLE OF INVENTION: Using Prosaposin-Derived Peptides NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS: ADDRESS: Campbell and Flores STREET: 4370 La Jolla Village Drive, Suite 700
CITY: San Diego.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 22;
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/231,159
                     COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                     CORRELATION NUMBER: US/08/484,594A
FILING DATE: 07-JUN-1995
CLASSIFICATION: 514
PRIOR APPLICATION 514
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/100,247
FILING DATE: 30-JUL-1993
ATTORNEY/AGENT INFORMATION:
NAME: ISTACLSOCKET NUMBER: 29,655
REGISTRATION NUMBER: 29,655
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 1000 NUMBER: 019-235-8550
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APPLICATION NUMBER: US/09/231,159
FILING DATE: 05-MAR-1996
ATTORNEY/AGENT INFORMATION:
NAME: CAMPDEIL, CARLTYN A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-UD 1928
TELECHMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6 CEXXXKEXXKXXDNNKXEKEXX 27
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Diskette
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; FRAGMENT TYPE: internal
US-08-484-594A-1
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STRANDEDNESS: sir
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STATE: Califor
COUNTRY: USA
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MEDIUM TYPE;
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Sequence 3, Appli
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Sequence 340, App
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226.265 Million cell updates/sec
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2: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
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14: /cgn2_6/ptodata/2/pubpaa/USOS_PUBCOMB.pep:*
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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US-09-870-759-60

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US-09-870-759-61

US-09-870-759-61

US-09-973-126-4

US-09-753-126-4

US-09-957-143-1

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US-09-949-713-13-10

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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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Maximum |
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Sequence 2, Application US/09780438A
Publication No. US20030095999A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION:
FURSACION OF Application to Transmembrane Drug Delivery Systems
FILE REFERENCE: 10872/0474852
CURRENT APPLICATION NUMBER: US/09/780,438A
CURRENT FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: US 60/181,754
PRIOR APPLICATION NUMBER: US 60/181,754
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/09780438A
Publication No. US20030095999A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: Fusogenic Properties of Saposin C and Related Proteins and PO
TITLE OF INVENTION: for Application to Transmembrane Drug Delivery Systems
FILE REFERENCE: 10872/04/4352
CURRENT APPLICATION NUMBER: US/09/780,438A
CURRENT FILING DATE: 2001-02-09
PRIOR APPLICATION NUMBER: US 60/181,754
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3e-05;
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19; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
50.0%; P
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 50.09
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
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US-09-780-438A-1
US-09-780-438A-2
                                                                                                                                                                                                                                                                                                                                                                                       US-09-780-438A-2
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Sequence 60, Appl Sequence 73, Appl Sequence 73, Appl Sequence 1, Appli Sequence 1, Appli Sequence 2, Appli Sequence 2, Appli Sequence 23, Appli Sequence 11, Appli Sequence 23, Appli Sequence 21, Appli Sequence 22, Appli

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; ORGANISM: Homo sapiens
US-09-753-126-3
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Best Local Similarity
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US-09-767-007A-2
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LENGTH: 523
TYPE: PRT
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                                                                                                                                                                                                                         TYPE: PRT
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SOFTWARE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: Yasuo Kishimoto
TITLE OF INVENTION: HARAMCEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILE REFERENCE: MYELOS.2DCIC1
CURRENT APPLICATION NUMBER: US/99/767,007A
CURRENT FILING DATE: 1997-10-22
PRIOR APPLICATION NUMBER: 08/958,970
PRIOR FILING DATE: 1997-10-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 80
TYPE: PRT
ORGANISM: ALIficial Sequence
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Sequence 3, Application US/09753126

Patent NO. US2002027219A1

GENERAL INFORMATION:
APPLICANT: OKEELS, JENS SIGURD
APPLICANT: HALKIER, TORBEN
APPLICANT: HALKIER, TORBEN
TITLE OF INVENTION: ACTIVATORS
TITLE OF INVENTION: ACTIVATORS
CURRENT APPLICATION ACTIVATORS
CURRENT APPLICATION ACTIVATORS
CURRENT APPLICATION NUMBER: US/09/753,126
CURRENT APPLICATION NUMBER: B4 1999 01891
PRIOR FILING DATE: 1999-12-30
PRIOR FILING DATE: 1999-12-30
PRIOR FILING DATE: 1000-01-06-11
PRIOR FILING DATE: 2000-01-06-06
PRIOR FILING DATE: 2000-01-06-12
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                                                                                                                                                                                                    Length 40;
                                                                                                                                                                                                                                                                                        1 XXCEXCEXXXXEXXXXDNNKXEKEXXDXXDKXCXXXX 38
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                                                                                                                                                                                                100.0%; Score 131; DB 9; 50.0%; Pred. No. 3.2e-05; tive 19; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: Artificial peptide US-09-767-007A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/09767007A Patent No. US20020077275A1 GENERAL INFORMATION:
                    NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn version 3.0
SEQ ID NO 1
LENGTH: 40
PRIOR FILING DATE: 2000-02-11
                                                                                                                                                                                             Query Match
Best Local Similarity 50.0°
Matches 19; Conservative
                                                                                                        TYPE: PRT
ORGANISM: Homo saplens
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Les 19; Conserva
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APPLICANT: Pierre, LEGRAIN

TITLE OF INVENTION: Protein protein interactions between Shigella Flexneri polypep

TITLE OF INVENTION: mammalian polypeptides

FILE OF INVENTION: mammalian polypeptides

FILE REFERENCE: B4778A

CURRENT APPLICATION NUMBER: US/10/043,487

CURRENT FILING DATE: 2002-04-30

PRIOR APPLICATION NUMBER: US 60/261,130

PRIOR FILING DATE: 2001-01-12

NUMBER OF SEQ ID NOS: 561

SOFTWARE: Petentin version 3.1

SEQ ID NO 340

LENGTH: 209
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Patent No. US20020077275A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Vasuo Kishimoto
TITLE OF INVENTION: PHARMAGEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILE REFERENCE: WYELOS.2DC1C1
CURRENT APPLICATION NUMBER: US/09/767,007A
CURRENT PILING DATE: 2001-01-22
PRIOR APPLICATION NUMBER: 08/958,970
PRIOR FILING DATE: 1997-10-28
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 VYCEVCEFLVKEVTKLIDNNKTEKEILDAFDKMCSKLP 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 XXCEXCEXXXKEXXXXDNNKXEKEXXDXXDKXCXKXX 38
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Pred. No. 7.7e-05;
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Pred. No. 0.00026;
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FastSEQ for Windows Version 4.0
             PRIOR FILING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: PA 2000 01027
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-07-11
NUMBER OF SEQ ID NOS: 147
SOFTWARE: PATENTIN VET. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 340, Application US/10043487
Publication No. US20030055220A1
GENERAL INFORMATION:
APPLICANT: HYBRIGENICS
60/211,124
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50.0%; P
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Best Local Similarity 50.0%;
Matches 19; Conservative 19.
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US-10-043-487-340
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APPLICANT: Jiang, Yuqiu
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE THERAPY
TITLE OF INVENTION: AND DIGGNOSIS OF PANCREATIC CANCER
FILE REFERENCE: 210121.566
CURRENT APPLICATION NUMBER: US/10/060,036
CURRENT FILING DATE: 2002-01-30
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50.0%; Pred. No. 0.00083;
ive 19; Mismatches 0;
                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 4560
SOFTWARE: FastSEQ for Windows Version 4.0
                                                            Kalos, Michael D.
Lodes, Michael J.
Persing, David H.
Hepler, William T.
    Publication No. US20030073144A1 GENERAL INFORMATION:
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                                             Darin R.
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US-10-060-036-73
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Matches 19; Conserv
                                           APPLICANT: Benson,
APPLICANT: Kalos,
APPLICANT: Lodes,
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LENGTH: 592
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US-09-753-126-4
                                                                                                                                                                                                                                                                                                     SEQ ID NO 73
LENGTH: 527
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Petent No. US20020177551A1
GENERAL INFORMATION
APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
FILE REPERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759
CURRENT APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2002-01-14
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: Patentin version 3.1
SEQ ID NO 601
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Batent No. US20020177551A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: TERMAN, David S
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATMENT OF NEOPLASTIC DISEASE
FILE REFERENCE: 870759
CURRENT APPLICATION NUMBER: US/09/870,759

FILENGE APPLICATION NUMBER: US 60/208,128
PRIOR FILING DATE: 2000-05-30
NUMBER OF SEQ ID NOS: 166
SOFTWARE: 2000-05-30
SEQ ID NO 6:1
LENGTH: 527
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                                                                Length 523;
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Pred. No. 0.00083;
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                                                                                                      0; Indels
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                                                            %; Score 131; DB 10;
; Pred. No. 0.00082;
19; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 131; DB 9;
Best Local Similarity 50.0%; Pred. No. 0.00082;
Matches 19; Conservative 19; Mismatches 0
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19; Mismatches
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                                                            100.0%;
50.0%; I
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Matches 19; Conservative
                                                            Ouery Match
Best Local Similarity 50.03
Matches 19; Conservative
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US-09-870-759-60
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ORGANISM: Homo sapiens
; ORGANISM: homo sapiens
US-09-767-007A-2
                                                                                                                                                                                                                                           RESULT 7
US-09-870-759-60
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US-10-060-036-73
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Gaps

Indels

Length 527

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Gaps
                                                                                   GENERAL INFORMATION:
APPLICANT: OKKELS, JENS SIGURD
APPLICANT: OFNSEN, ANNE DAM
APPLICANT: HALKIEN, TORBEN
APPLICANT: JENSEN, RIKE BOLDING
TITLE OF INVENTION: IMPROVED LYSOSOMAL ENZYMES AND LYSOSOMAL ENZYME
TITLE OF INVENTION: ACTIVATORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: Description of Artificial Sequence: Chimeric; OTHER INFORMATION: SapC-linker-GCB polypeptide US-09-753-126-4
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Best Local Similarity 50.0%; Pred. No. 0.00096;
Matches 19; Conservative 19; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                               TITLE REPERENCE: 31-000600US
CURRENT APPLICATION NUMBER: US/09/753,126
CURRENT FILING DATE: 2001-06-11
PRIOR APPLICATION NUMBER: PA 1999 01891
PRIOR FILING DATE: 1999-12-30
PRIOR FILING DATE: 1999-12-30
PRIOR PRILING DATE: 2000-01-06
PRIOR PRILING DATE: 2000-06-02
PRIOR FILING DATE: 2000-06-02
PRIOR FILING DATE: 2000-06-12
PRIOR FILING DATE: 2000-06-12
PRIOR FILING DATE: 2000-06-12
PRIOR PRILING DATE: 2000-06-12
PRIOR PRILING DATE: 2000-06-12
PRIOR APPLICATION NUMBER: 60/211,124
PRIOR PRILING DATE: 2000-06-12
PRIOR PRILING DATE: 2000-06-12
PRIOR PRILING DATE: 2000-06-12
PRIOR FILING DATE: 2000-06-30
PRIOR PRILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: PA 2000
PRIOR FILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: PA 2000
PRIOR PRILING DATE: 2000-06-30
Sequence 4, Application US/09753126 Patent No. US20020127219A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Artificial Sequence
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RESULT 13
US-09-767-007A-9
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US-09-932-183A-2
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                                                                                                                             Sequence 1, Application US/09767007A

Sequence 1, Application US/09767007A

Patent No. US20020077275A1

GENERAL INFORMATION:

APPLICANT: John S. O'Brien

APPLICANT: John S. O'Brien

TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING

TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM

FILE REFERENCE: MYELOS. 2DC1.01

CURRENT APPLICATION NUMBER: US/09/767,007A

CURRENT PILING DATE: 2DC1-01-22

PRIOR APPLICATION NUMBER: 08/958,970

PRIOR FILING DATE: 1997-10-28

NUMBER OF SEQ ID NOS: 11

SEQ ID NO 1

LENGTH: 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58.8%; Score 77; DB 10; Length 22; llarity 54.5%; Pred. No. 0.94; Conservative 10; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10; Length 22; 0.94;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: JOHN S. O'Brien
APPLICANT: David E. Wright
TILLE OF INVENTION: RETRO-INVERSO PROSAPOSIN-DERIVED
TITLE OF INVENTION: RETRO-INVERSO PROSAPOSIN-DERIVED
TITLE REFERENCE: MYELOS.018C1
CURRENT APPLICATION NUMBER: US/09/957,143
CURRENT FILING DATE: 2001-09-19
PRIOR PPLICATION NUMBER: PCT/US00/08550
PRIOR PPLICATION NUMBER: 60/126,991
PRIOR PLIING DATE: 1999-03-30
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FEASTSEQ FOR Windows Version 4.0
  1 XXCEXCEXXXKEXXKXXDNNKXEKEXXDXXDKXCXKXX 38
                       3 VYCEVCEFLVKEVTKLIDNNKTEKEIIDAFDKMCSKLP 40
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Artificial peptide US-09-767-007A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: Synthetic peptide US-09-957-143-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 CEXXXKEXXKXXDNNKXEKEXX 27
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; Sequence 1, Application US/09957143
; Petent No. US20020128193A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT ORGANISM: Artificial Sequence
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Best Local Similarity
Matches 12; Conserve
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Best Local Similarity
Matches 12; Conserva
                                                                                                  RESULT 11
US-09-767-007A-1
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                                                 APPLICANT: John S. O'Brien
APPLICANT: John S. O'Brien
APPLICANT: Yesuo Kishimoto
TITLE OF INVENTION: PHARMACEUTICAL COMPOSITIONS COMPRISING
TITLE OF INVENTION: SAPOSIN C AND NEUROTROPHIC PEPTIDES DERIVED THEREFROM
FILE REPERENCE: MYELOS. 2DCJC1
CURRENT APPLICATION NUMBER: US/09/767,007A
CURRENT PILING DATE: 2001-01-22
PRIOR FILING DATE: 1997-110-28
NUMBER OF SEQ ID NOS: 11
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 9
LENGTH: 22
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Fatent No. US20020127641A1
GENERAL INFORMATION:
TITLE OF INVENTION:
FILE REPERENCE: GG394C1-US
CURRENT APPLICATION NUMBER: US/09/932,183A
CURRENT FILING DATE: 2001-08-17
FRIOR APPLICATION NUMBER: US/09/308,375
FRIOR APPLICATION NUMBER: PS/09/08
FRIOR FILING DATE: 1998-09-08
FRIOR FILING DATE: 1997-09-15
NUMBER OF SEQ ID NOS: 3
SOFTWARE: FRASEQ for Windows Version 3.0
LENGTH: 2285
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3.9;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 51.9%; Score 68; DB Best Local Similarity 34.4%; Pred. No. 2e+C Matches 11; Conservative 17; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 53.4%; Score 70; Best Local Similarity 45.5%; Pred. No. Matches 10; Conservative 12; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; OTHER INFORMATION: Artificial peptide US-09-767-007A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CEFVVKEVAKLIDNNRTEEEIL 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 CEXXXKEXXKXXDNNKXEKEXX 27
Sequence 9, Application US/09767007A Patent No. US20020077275A1
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Patent No. US20020044944A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
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Search completed: June 2, 2003, 14:21:06 Job time : 17 secs